THE BUILDER

A RECORD OF ARCHITECTURE AND CONSTRUCTION.

VOL. CVIII.—No. 3769. APRIL 30, 1915.

ARCHITECTS' QUANTITIES.

THE methods which architects employ in order to express their ideas in concrete form change slowly, perhaps, but they change inevitably. If we compare our own working drawings with those of the great masters in architecture of the past we are surprised to find with what scanty information the workmen of old had to be satisfied. The drawings of Inigo Jones and Wren, for instance, would bring a smile to the lips of the modern draughtsman, and would cause much searching of heart to the clerk of works and builder's foreman; so, too, with the estimates of those bygone times. What now takes fifty pages of lithography was then set forth on a single sheet of foolscap. There is nothing in the present day to compare with an estimate of the seventeenth century, unless it be a country builder's figures for some small work with the like of which he is familiar. Other times, other manners, so also other circumstances, other methods. The country builder does his own work, some of it with his own hands. The great contractor may never have touched a tool in his life; his talent lies in organising and directing the work of others. His office staff are not craftsmen, but good clerks, some of them experts in prices and at the figures necessary for filling in a bill of quantities. For them the more detailed the bill the closer the estimate. But put a London quantity surveyor's bill into the hands of a country builder and many of the little items do not get priced out at all; they are included in the price of the principal items. The prices for brickwork, stonework, and so forth include the numerous items for "labour" which the quantity surveyor deems necessary (and perhaps rightly so) for the large contractors to whom, as a rule, his bills are sent.

The elaboration of surveyors' quantities has grown up as a result of their becoming a separate branch of work carried out by specialists. All specialists working within the four corners of a limited calling develop a tendency towards elaboration and a minuteness of perfection. But whether, in this instance, the result is not an undue increase in the cost of building is a point worth consideration. There is little doubt that a country architect who takes out his own quantities and employs a good country builder can get a building erected for much less than can a London architect of equal skill who employs a quantity surveyor. The proportion, we venture to say, would be from three-fourths to four-fifths. The difference does not arise entirely from the difference in the way of taking out the quantities, but partly from the difference in training and from the sterner school of economy in which the country practitioner has been brought up. But the fact of an architect taking out his own quantities undoubtedly tends to economy. He is more closely in touch with his own ideas and his own methods of expressing them in drawings than an outside quantity surveyor can possibly become. All through the progress of the work he has a more intimate knowledge of what has been provided, of what economies can be effected, of how this and that can be adjusted to meet exigencies that may arise, than can possibly be enjoyed by his brother who has deputed the compilation of this complicated and delicate material to another.

But, apart from this aspect of the question, the taking out of quantities is admirable training for an architect. It brings home to him as nothing else can the things that are necessary towards carrying out his beautiful ideas in practice. For before he can complete his quantities, if he does them efficiently, every point of construction has to be mastered; he has to visualise not only what he wants, but how he is going to get it. No faith, no hope that all will turn out right will be sufficient; he finds that it is incumbent on him to supplement faith and hope by assurance. He has to get behind the surface to the innermost heart of things, and when he does that he gets closer to the essence of architecture than any number of delightful drawings will bring him. He finds himself able to talk to the builder in his own language, not so much the spoken language as that of the mind and purpose. Further, having acquired facility in seeing how a thing has to be done, other and better ways of doing it present themselves, even maybe resulting in a modification of the design, for which probably it is none the worse, because it is founded on better construction.

But that all architects should take out their own quantities is an ideal state of things for which we should strive in vain, even were we disposed to do so. The quantity surveyor is firmly established, and the architect practising in a large town frankly admits his inability to undertake a task which, he prefers to think, is better left to a less delicately trained mind; his own time can be more profitably employed in regions more closely allied to art. However, it is well known that circumstances alter cases, and the architect practising in a small town finds himself not only competent to take out his own quantities, but practically compelled to do so, for there is no quantity surveyor within easy reach, and, moreover, it is a branch of work which he could ill afford to abandon.

It would be doing him an injustice to suppose that his work is either slipshod or inadequate; it might perhaps be a help to sound and sensible architecture if his example were more widely followed. But, human nature being what it is, so long as the professional quantity surveyors ply their business in the able and obliging manner of the craft, so long, we imagine, will the inexperienced young architect avail himself of their kindness in working out his construction and even in writing his specification; while older and busier men, who, of course, prepare details fully worked out and a specification minutely particular for the use of the surveyor, will still leave to him the work to which he is accustomed and to which they are not. In doing so, should they give the matter a thought, they will doubtless regret that the ideal is seldom attainable; they will reflect on the difficulty of subverting established customs, and concede that architects who take out their own quantities are not necessarily uncultured or unskilled in architecture.

In conceiving a design, especially if it be of a large and complicated building, it is impossible to foresee everything; not infrequently the preparation of the drawings has to be pushed forward at express speed, and it becomes impossible to digest the whole matter thoroughly. The result is that during the process of erection various changes are found desirable. Even if these causes should not operate, it is seldom that a design is not susceptible of improvement in the course of its execution; not perhaps in large things, but in some minor direction. The facility with which these alterations and improvements can be made is greatly enhanced if the architect has taken out his own quantities and has no need to refer to a distant quantity surveyor. It is perhaps a drawback to the whole system of quantities that they tend to indicate the design, to force the designer into the uncompromising attitude of "what I have drawn I have drawn," to rule out improvements for fear of complicating the settlement of the account. But the harshness of the situation is at least mitigated if the architect can decide the question in his own office without reference to some one outside, who is less closely in touch with the work than he is himself. Then in the settlement of the account, in dealing with extras and deductions, the architect is in a better position to deal with the builder if he is his own quantity surveyor than if he has to negotiate through a third party. The balance of advantages springing from architects' quantities is so considerably in favour of the employer that it is curious to find a growing disposition on the part of public bodies to appoint an outside surveyor for their work. Perhaps it may be traced to the practice of putting out designs to competition, and to the desire to be protected from the inexperience of juvenile competitors.

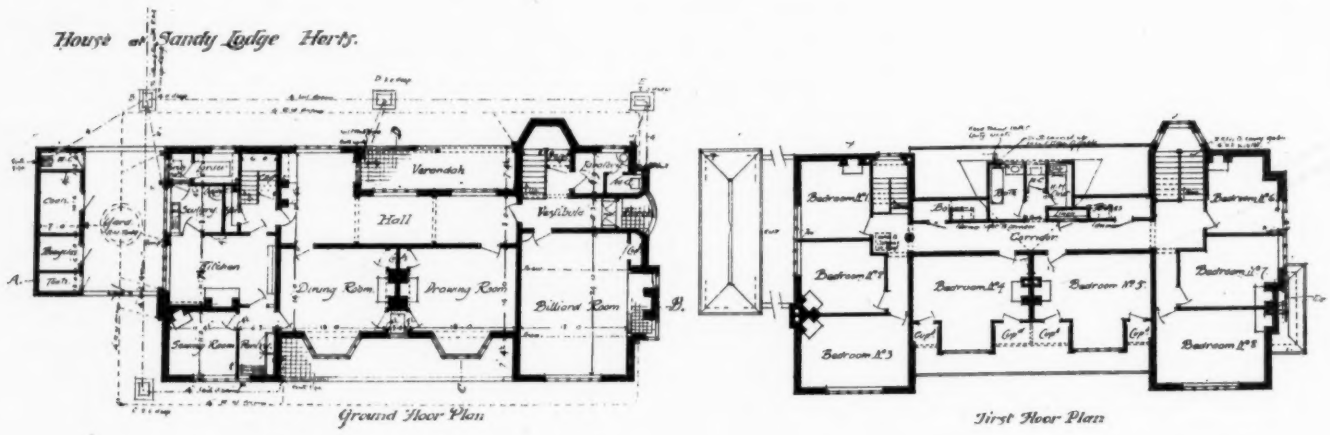
NOTES.

Sanitation in Armament Workshops.

THE extremely interesting account of the activities of the medical service at the front, which has been communicated by an "Eye-Witness" at General Headquarters, draws attention to the important fact that, although the present low sick rate among the troops is to some extent due to the improved training of officers and men in the exercise of ordinary precautions, yet it is in the main the result of the preventive measures taken by the medical staff. These measures have included the careful consideration of drainage, sanitation, food, and water supplies, and the suppression of the typhoid "germ-carrier." When operations in the field first developed into what has become known as siege warfare this journal ventured to call attention to the unusual opportunity such conditions afforded for the exercise of sanitary precautions over a wider area, and of a more far-reaching character than has hitherto been possible in war, and also to urge the adoption of all such measures as are usually known by the name of preventive medicine. Their effect on the efficiency of our army in the field having been demonstrated by "Eye-Witness's" communication, we have every reason to believe they would have the same beneficial results in the efficiency of our army in the workshops. If, as we are constantly being told, the favourable prosecution of the war and the ultimate fate of the country depend as much on the workers in the munition shops and shipyards as on the soldiers in the field, the lives of both workers and soldiers seem of equal value to the State. This being so, they demand equal care and equal precautions to safeguard their health. An epidemic on the Tyne might weaken our offensive power as seriously as an epidemic in Flanders, and, though there does not appear to be as much danger in the one case as in the other, equal care should be taken to make sure the danger never arises. But, apart from possible epidemics, the conditions under which work is now being carried on in our armament factories becomes more than ever a matter of national concern. In normal times factory conditions can hardly be called ideal from the hygienic point of view. It is just possible that in these abnormal times, when additional accommodation has to be hastily improvised, the normal standard of sanitation may in some cases have been overlooked. But, even if it has been most rigorously enforced in every case, it is a question whether it is high enough for the special emergency of the moment. If long hours under continuous pressure during a period of general nervous strain are to be maintained without that lowered vitality which leads to inefficiency and a diminished output, the conditions under which the work is done and the general environment of the workers should be as hygienic as modern science and organisation can make them. Extra precautions, something more than the ordinary routine enforcement of the Factory Act and local by-laws, seem called for if our industrial army is to arrive at its maximum strength and maintain for any length of time the largest output of munitions of war of which the country is capable. We could wish that the soldier in the workshop had at his sole disposal the services of as efficient and well organised a medical service as that which has done so much to preserve the health of the soldier in the field.

Risk of a House Famine.

AT a conference of local authorities on Town Planning and Housing, Mr. Aldridge, the Secretary of the National Housing and Town Planning Council, pointed out that, as the Government were discouraging housing in order that men might be available for work in connection with the war, and as in normal times 80,000 cottages were required to meet the demand, there would be a shortage in accommodation after the war, when capital might be scarce, the effect of which would be to create a house famine and enable those owning houses to charge exorbitant rents. To meet the difficulty he suggested that the State should not only stimulate the activities of local authorities, but give facilities to public utility societies and private enterprise under well-defined conditions, and provide houses in all areas where there was a shortage. We are afraid at the present time the difficulty is that both men and money are required in two directions and for two different objects, and that in the exceptional circumstances the arts of peace must suffer; but we have much to be thankful for, as a great mass of the ordinary industrial work of the country is going on under conditions which are far more normal than those obtaining abroad. Were the whole of several counties in the possession of the enemy conditions here would approximate to what they are in France, and the fact that we have escaped this is due to what Cecil Rhodes defined as the marvellous "luck" of this country, which sometimes begets a feeling of fatalism, to which a well-known county court judge gave expression when he said we should be safe and secure without armaments, as it was the will of Heaven that such should be the case.

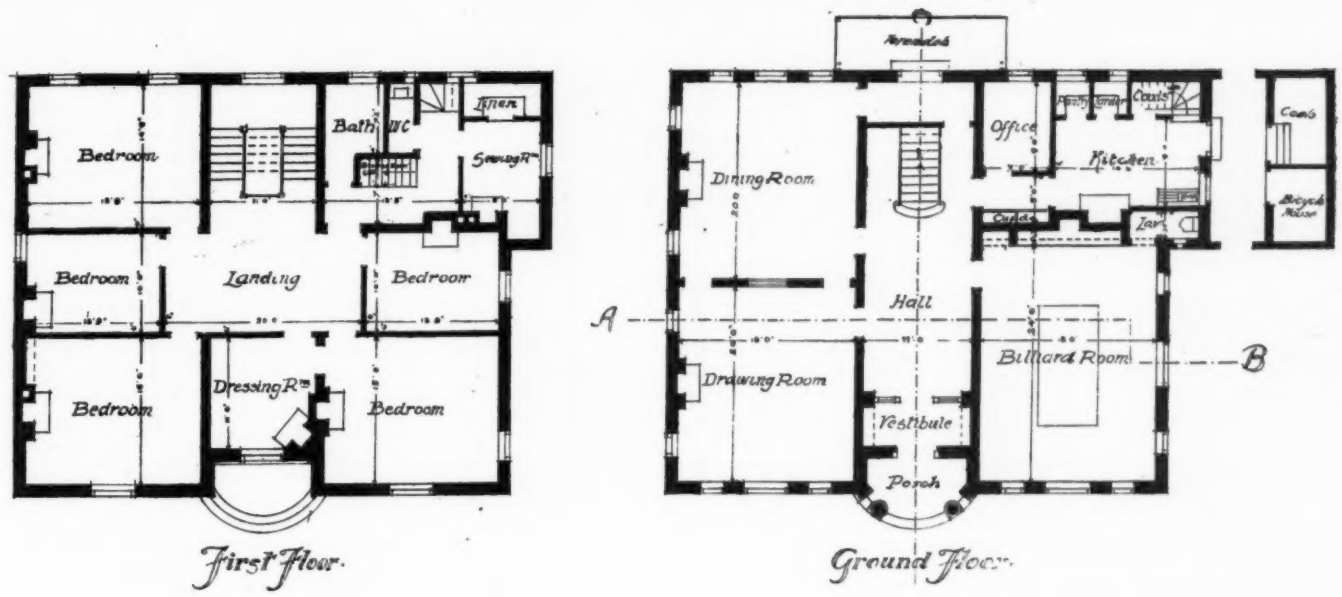


North-West View.

South-East View.

House at Sandy Lodge.

Messrs. Wills & Anderson, Architects. (*See page* 397.)



A House at Harrow : Plans.

Messrs. Wills & Anderson, Architects.

HOUSES AT HARROW AND SANDY LODGE.

ARCHITECTS are not infrequently blamed by those who see their executed work, but who do not know the conditions and limitations under which the designs criticised have been produced. In almost all cases these limitations may suit special clients, but would not suit anyone else, and, if houses have afterwards to be sold, adverse criticisms are made by those who would have imposed other and different conditions had they been instructing an architect.

In the house we illustrate at Sandy Lodge the requirement was to design a house on a site facing south, but rising so steeply that all the views are to the north and west, the greater part of the garden being on the north side. The requirements as to accommodation can be gathered from the plans which we illustrate, and include the provision of a billiard-room and eight bedrooms on the first floor. The exigencies of space thus prevent the bath-room being placed where it should be—above the kitchen—and another of the requirements, that the house should be long and low in outline, prevents its being made larger in size. All the rooms are square, the triangular portions formed by the main roof being occupied by cupboards.

The client's requirements at Harrow, on the other hand, on a site which faces due north, with the garden in rear, was that the house was to be square and symmetrical in outline, and the reception-rooms of the size and proportions shown, the staircase being centrally placed. No consideration of aspect would induce the client to consent to an arrangement by which the sitting-rooms should face south and the kitchen north, and though it was pointed out that the kitchen accommodation was inadequate and the position absolutely wrong. Thus the house is the direct outcome of conditions laid down, and its advantages and defects arise directly from those conditions; yet criticism would be provoked on the points which arose out of direct instructions. A maid's room, water-closet, and box-room on the upper floor complete the accommodation provided.

THE SURVEYORS' INSTITUTION.

AN ordinary general meeting of the Surveyors' Institution was held on the 26th inst. at No. 12, Great George-street, Westminster, S.W., Mr. Howard Chatfeild Clarke, President, in the chair.

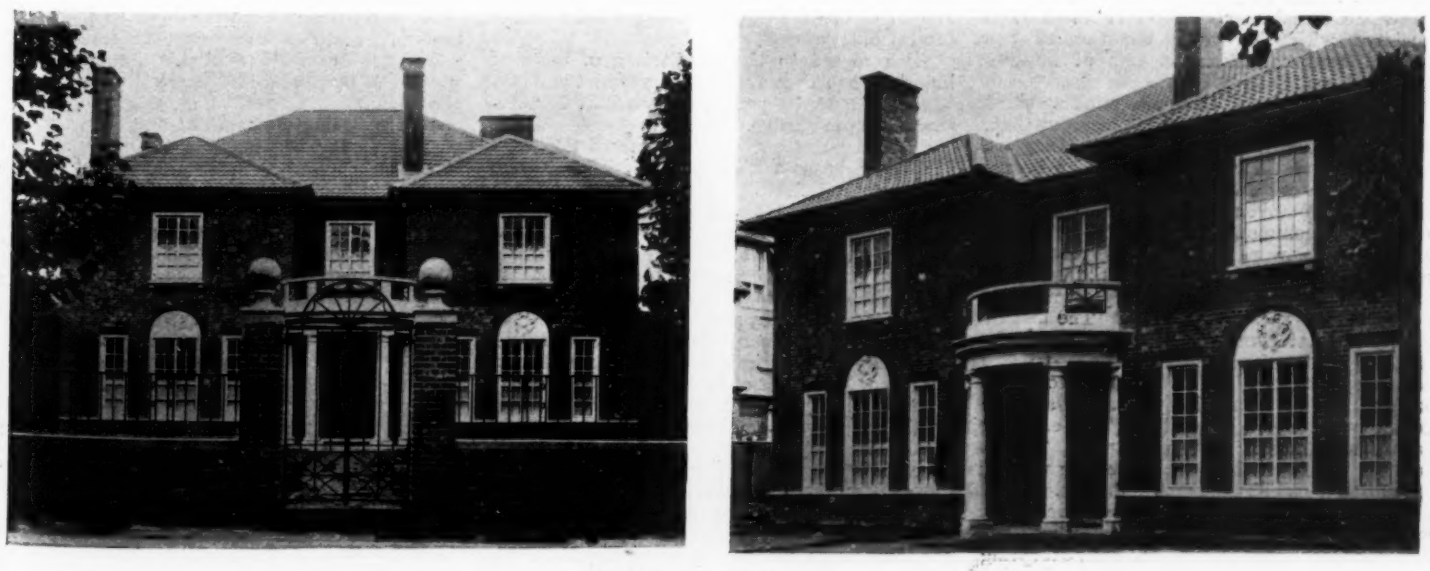
The minutes of the previous meeting were read and confirmed.

It was announced that six presentations had been made to the library, and it was agreed that the thanks of the Institution should be sent to the donors.

The adjourned discussion on the papers read by Mr. C. S. Joseph and Mr. R. Strachan Gardiner (Fellow) on "The Report of the Land Inquiry Committee on Housing" was reopened by Mr. W. E. Riley, Superintending Architect to the London County Council.

In the course of his remarks Mr. Riley said:—

"In reopening the discussion on the papers which were presented to the Institution a fortnight ago, it is first a pleasure to bear testimony to the ability with which a very controversial subject has been dealt with. The papers are a convincing proof of a close study of what is probably the most important social problem of this generation, and if criticism is allowed to one who has had extensive experience it would be that the absence of detailed statistics to support the conclusions is rather conspicuous, and I would suggest that in matters of this controversial character well-digested figures are invaluable to support the opinions expressed. As an example, on page 2 of his paper (394 of *Transactions*) Mr. Joseph quotes from the census returns to show that in 1911 there were 32,351 tenements each of one room, which were occupied by more than two persons. In this connection it must be remembered that the London County Council practice in fixing the accommodation in working-class dwellings is to allow two adults per room, infants under five being disregarded, and children between five and ten years of age being counted as half an adult. The Registrar-General, in making up his statistics for the census returns, counts all occupants in a room as "a person," of whatever age. That officer, in presenting Vol. VIII. of the census of 1911, states that "the proportion of people, living more than two in a room, to the population was 5·5 per thousand in Belfast, 7·0 in Manchester, 9·5 in Liverpool, 9·8 in Birmingham, 16·8 in London, 31·1 in Edinburgh, 37·9 in Dublin, and 53·6 in Glasgow." He also points out earlier in his report that "the statistics do not, for obvious reasons, take account of the sizes of rooms." In the 32,351 cases of "overcrowding" mentioned in Mr. Joseph's paper, 19,006 are families of three persons in the one-room tenement of unknown area; the "excess" in 12,695 cases is a child under ten years of age and perhaps under five—it is the



A House at Harrow.

Messrs. Wills & Anderson, Architects.

C

only child—and is presumably the baby that must, in working-class families, sleep in the room with the parent in any case. In 1,087 families there are one adult and two children under ten years of age, which is not an excess at all from the standard accepted under Public Health regulations. Similarly, in the three-room tenements, there are 28,341 cases of overcrowding, of which 13,623 are cases of seven persons in the three-room tenement. In only 3,204 of these is there any real overcrowding. As the figures are taken from the census returns it does not follow that all the cases of more than two persons to a room are in houses occupied by persons of the working class, who are assumed to be the subject of the paper. In March, 1914, in a population of 36,004 persons in London County Council dwellings, the number of cases not complying with the standard was thirty-two, or 33 per cent. of the total number of occupied tenements. The overcrowding is usually found to be due to one or more children in the tenement having reached the age of five or ten years and so being counted in accordance with the Council's scale. This excess is usually remedied by the removal of the family to a larger tenement in the dwellings.

The City Corporation and each metropolitan borough council make and enforce by-laws for the registration and inspection of houses let in lodgings, for securing their sanitary condition, for separating the sexes, and for limiting the number of occupants (usually on the basis of 300 cubic ft. of air space per adult for sleeping-rooms, or 400 cubic ft. for sleeping and living rooms ; half the space for children under ten)

Any house or part of a house so overcrowded as to be injurious or dangerous to the health of the inmates, whether members of the same family or not, is a nuisance liable to be dealt with summarily. There are two standards of overcrowding—viz., that adopted by the Registrar-General in his census report, and that prescribed in the by-laws relating to houses let in lodgings which I have just referred to. But the medical officers are not bound by either of these standards. In 1911 there were 3,028 cases of overcrowding reported in the City and County of London, of which all but fifty-two were remedied. There were only seven prosecutions. Whilst by no means desiring to belittle the question of overcrowding, it is, I think, well to point out that the figures are capable of another interpretation.

On pages 3 and 4 (*Transactions* 397-8) Mr. Joseph offers a number of criticisms with regard to the return on capital outlay, and deals with the operations of public authorities on the one hand and companies and trusts on the other. In my opinion, it is difficult to exactly compare the financial arrangements of the public authorities such as the London County Council with those of companies and trusts. As is well known, the Council's arrangements provide for a sinking fund to replace the capital expended in sixty years, and this fund for land and buildings takes anything from 8 per cent. to even 18 per cent. of the gross rental. Notwithstanding this, the whole of the Council's operations show at the present time a return of about 3·80 per cent. after taking the "housing value" of land, interest and sinking fund charges, but, of course, disregarding the cost of clearances in the case of Parts I. and II., and improvement schemes. Since I have been associated with this work the Council has provided accommodation capable of housing 50,732 persons.

On the question of the supply falling short of the demand, it must be borne in mind that, although the tenements may all be let, they are not occupied to their full extent. The census of London County Council dwellings (excluding lodging-houses) taken in March, 1914, showed that of an accommodation provided for 55,488 persons, there were only 36,004 persons in occupation, of which 12,530 were children under fourteen years of age. This represented an average of 1·31 persons per room. The loss by empties at that time was equivalent to only 1·43 per cent. of the gross rental. In this connection it may be of interest to state that a week's rent is remitted, at the housing manager's discretion, in effecting lettings at thirteen of the Council's "block dwelling" estates, whilst there are long waiting lists of about 500 at the cottage estates.

In the central zone, the loss of rent by empties in the London County Council dwellings is ·85 per cent. of the gross rental, and, excepting one estate which was built to satisfy an obligation and is worked at a loss, the loss of rent in the central zone is only ·5 per cent. of the gross rental.

With regard to the point raised by Mr. Joseph on page 4 (398 of *Transactions*) as to the necessity for a subsidy towards an estimated deficiency, it must be borne in mind that any scheme of rehousing to fulfil an obligation due to an improvement scheme has, in London, always required a subsidy in some form. This may be accounted for by the low rents ruling in the district, or the high rates of the borough in which the property is situate, and the obligation to provide housing in a definite area. All the land sold to companies or trusts by the Metropolitan Board of Works with a housing obligation upon it received a subsidy in the form of a "writing down" from the commercial value to "housing value" at which it was charged to purchasers. In the case of thirty sites sold by the Board to companies or trusts, the commercial value of which was estimated at £727,535, no less than £397,613 (or nearly 55 per cent.) was "written off."

I am unaware of anyone having carried out such a scheme without a subsidy. Voluntary housing (under Part III.), as has repeatedly been demonstrated, can be carried out with financial success both as regards block dwellings at no great distance from the centre of London and in cottages in suburban districts. Take the block dwellings at the Caledonian Estate in Islington, which show a surplus of over 10 per cent. on a gross rental of £5,585 ; Wessex-buildings, Upper Holloway, show a surplus of over 5 per cent. on a gross rental of £4,153. In cottages in suburban districts, the Tottenham Fields Estate shows a surplus of nearly 8 per cent. on a gross rental of £29,427 ; and Old Oak Estate, which is still in course of development, shows a surplus of $13\frac{1}{5}$ per cent. on a gross rental at present amounting to £4,884.

As to the class of tenant who occupies the Council's dwellings, evidence was given before the Royal Commission on Housing (Scotland) that at the Cable-street Dwellings, Stepney, 12·04 per cent. of the heads of families were earning under £1, and 25·30 per cent. under 25s. per week; at the Caledonian Estate, Islington, 4·53 per cent. under £1 per week, and 26·79 per cent. under 25s. per week. The witness also stated that at Cable-street 88 per cent. of the tenants were within one mile of their place of employment, and at Caledonian Estate nearly 51 per cent. were similarly placed.

As an example of subsidy, it may be remarked in passing that the report of the Departmental Committee on Housing Conditions in Dublin states that "having regard to the manner in which the capital of this trust (the Iveagh or Guinness Trust) was provided, and to the fact that the surplus at the end of each year is added to the capital, the particulars furnished are not sufficient to enable us to compare its financial operations with those of other dividend-paying companies."

With regard to the statement on page 4 of Mr. Joseph's paper (see *Transactions*, page 398), that an additional 1s. per week would be required on the rents for baths in block dwellings for a public authority, I can only agree with a previous speaker (Mr. Edwin Evans) in assuming that the additional accommodation which would be required to find room for the bath has not been included in Mr. Joseph's 2d., and in my own experience, when the question was tested with something like these results, a system of central heating was included in the capital outlay

With regard to the comparison of costs of buildings one with another, to use cost per foot cube or even cost per room as a unit of comparison is too elusive.

I would point out that the use of the price per foot cube as a unit of comparison appears to offer the following disabilities:—Different types of plan, different proportions of the component parts which have to be valued at a different rate per foot cube, different localities, the variation in current market rates for materials and labour (the cost of building materials twenty years ago is not to be compared with present-day prices), and the difficulties of foundations. The use of "cost per room" as a unit of comparison is frequently employed, but it must be used with caution. Sculleries, small kitchens, etc., cannot be reckoned as "rooms," and consequently tenements in which this accommodation is deficient appear favourably in comparison with those in which these conveniences are provided on a more adequate scale. With few exceptions the tenements in the Council's dwellings are self-contained, that is to say, each tenement contains its own water-closet and scullery with their accompanying fittings. In an "associated tenement" the water-closet and scullery are used in common with others, and in other cases the water-closet is private, but outside the tenement, and the scullery only is used in common. In some schemes where there are associated tenements the scullery with, say, one sink and a copper will serve four tenements and save the cost of three sculleries out of four tenements. The results are similar if the water-closet is common. I submit that the more reliable standard of comparison is to be obtained by calculating the cost per square foot of rent-producing floor space, including offices.

As regards economies in methods of design mentioned by Mr. Joseph, I have given considerable attention to analysing what may be termed specialised forms of construction, and am reluctantly compelled to come to the conclusion that the forms generally accepted are the more economical. As an instance of this I may quote the case of a block of dwellings recently issued by me for competition, where alternative estimates were obtained for floors under the following conditions: (*a*) With reinforced concrete to a scheme designed by myself, and (*b*) with reinforced concrete floors to a scheme to be submitted by the contractor. Taking the lowest set of tenders where all the prices were submitted, I found that the contractor in question required an addition of 1·7 per cent. to his tender for my own scheme above ordinary construction, and 2·3 per cent. more if he tendered for a scheme to be submitted by himself.

With regard to the question of repairs referred to by Mr. Joseph on p. 6 of his paper (p. 401 of *Transactions*), the London County Council sets aside about 10·12 per cent. of the gross rental. This has resulted, to the end of last month, in a total accumulated reserve of nearly £66,000. Ten years, as given by Mr. Joseph, does not appear to me to be a sufficient term over which to review the prudence or otherwise of such an allowance as 6 per cent. for repairs and renewals. It is true that in the two years the Council published the actual cost of repairs it was found to vary from an average in one year of 6·62 per cent. to 6·88 per cent. in the following year ; but in the case of buildings which had been erected for about ten years, the actual cost of repairs and renewals approximated more closely to the 10 per cent. actually set aside, in some cases it was as high as 17·23 per cent. and 16·58 per cent. in two successive years.

It is also considered essential, and is certainly prudent, to set aside such a sum as will meet any changes of condition brought about by legislation or the weight of scientific opinion. Attention is invited to (1) the remodelling of the sanitary by-laws of the last twenty years, (2) the provision of means of escape in buildings occupied by more than two families and more than 30 ft. in height. It is pointed out that although the provision for repairs and renewals is one of the many elements against which the architect has to contend in planning a building which is to be a financial success, the professional adviser, in the case of a public authority, is not in a position to recommend the provision of a larger or smaller amount than is at present considered desirable by the valuing experts.

If the authority set aside 6 per cent. only for repairs, in almost every case there would be additional capital available, sufficient to provide a bath without in any way increasing the rents.

Before closing my remarks on urban housing perhaps I may be permitted to briefly refer to the County Council's scheme of financing their housing schemes. It has been decided that the rents to be charged shall not exceed those ruling in the neighbourhood, and shall be so fixed that after providing for all outgoings of maintenance and management and interest and sinking fund charges on capital, there shall be no charge on the county rate in respect of the dwellings. The interest and sinking fund charges are calculated upon the cost of erection plus the "housing value" of the site. After drawings are prepared showing the general arrangement and class of tenement proposed to be built, the gross income is then assessed according to the rents ruling in the neighbourhood where the dwellings are to be erected. All outgoings, including a contribution to the Repairs and Renewals Fund, are then deducted and the amount upon which the net income thus arrived at will pay interest and sinking fund charges is calculated. The "housing value" of the site is then deducted, and the

remainder is the "amount available" for buildings to compare with the architect's estimate for the provision of the dwellings, including all capital charges. This "amount available" averages about 45 to 48 per cent. of the gross rental, but there are cases where the "amount available" for building has been capitalised on the basis of 31 per cent. on the gross rental and the dwellings have been built. I have regarded this as somewhat tentative, and I certainly should not recommend anyone to embark on that experiment. There is a point below which it is questionable economy to cheapen construction.

Under Parts I. and II. of the Housing Act the Council or local authority are under an obligation to rehouse the number of persons mentioned in the order of the Local Government Board and in the neighbourhood of the cleared area. The effect of this is that the authority or person incurring the obligation has to take the land car-marked for housing purposes, has to pay the "housing value" of the land and erect the buildings, whether the estimated finances show an annual profit or a loss. In Part III. schemes the finances are estimated before the purchase of the property is decided upon, and in the Council's case the estate would not be acquired if any charge on the county rate were anticipated. The Local Government Board does not require to approve the plans, there are no restrictions as to the number of persons to be provided for the particular class of accommodation, nor is there any time limit within which the building must be commenced. This last item particularly affects the rate of interest charged on the capital, as time of building can be selected under a Part III. scheme. In clearance schemes the buildings have to be erected to programme, and have to compete with neighbouring slum property, as rents must not exceed those ruling in the neighbourhood.

The problem of housing is, in many respects, more complicated in central than in rural districts; but although, officially, my connection with the housing question has been considerably more urban than rural, enough of my time has been spent in country districts to enable me to appreciate the thoughtful manner in which Mr. Strachan Gardiner has approached the problem of rural housing. Many of the difficulties associated with housing are common to town and country, but probably the fundamental one—viz., that of economical construction—falls much more severely on rural than on urban schemes. The standard of wages in country districts is too low to enable the tenant to pay a rent for which adequate accommodation could be provided on a remunerative basis, and, on the other hand, the tendency to belittle the wisdom of employing sound and efficient construction has been pushed beyond what I think is expedient. Mr. Gardiner suggests that 2s. 6d. a week for rent is as much as can be expected out of a wage of 20s. At a Scottish housing conference the view was expressed that the percentage of rent to wages should not exceed 10, and it is indeed hard to see what satisfactory accommodation could be provided for a commercial rent of 2s. per week. The report of the Departmental Committee on Small Holdings appointed by the Board of Agriculture is instructive both as regards the cost of cheap cottages and their size. One member stated as the result of his tour of inspection that wherever cheap houses were found—as, for example, those built at £150 each in pairs, or £200 singly—either the builder had become bankrupt or would not repeat the experiment at the price, or that many extras would have to be omitted. This figure appears to agree with Mr. Gardiner's estimate on p. 7 of his paper (see *Transactions*, p. 422), and compares with the approximate cost of £210 for a three-room, £300 for a four-room, and £340 for a five-room cottage on the County Council estate at Old Oak Common, Hammersmith. Each cottage has a scullery and water-closet and is self-contained—this in addition to the habitable rooms. This cost includes land, roads and sewers. The Committee suggested a minimum size cottage of 10,000 cubic feet, and it appears to be out of the question to provide such accommodation employing any commendable construction and planning on a commercial basis for 2s. or 2s. 6d. a week. Of the two remedies indicated by Mr. Gardiner—(*a*) by subsidy, or (*b*) by raising wages—a previous speaker has pointed out that the effect of the latter is neutralised to a great extent by the continual increase in the cost of living, even apart from the exceptional increase due to war conditions. Without wishing to enter upon the controversial field of politics, it may perhaps be said that whilst the rural housing problem cannot be solved by increasing the labourer's wages, yet some amelioration of his condition in this direction may be inevitable and may do something towards a solution of the housing difficulty. The alternative of State or municipal subsidy is a purely political one which must be settled at the ballot-box. It may be argued by opponents of this solution that the question is one which should be settled on commercial lines and not in a spirit of philanthropy, which might have the effect of encouraging idleness and sapping the independence of the worker; also that a fictitiously low price would disturb the market and set up unfair competition. Against this may be urged the interesting results given by Mr. Gardiner on p. 7 of actual experience under the Irish Labourers' Acts, where, although the rents charged are extraordinarily low, it appears that the problem may be determined rather by practice than by theory."

The following gentlemen also took part in the discussion:—Messrs. George Corderoy, Edgar Harper, Dryland Haslam, Stanley Hicks, Reginald Brown, Cuthbert Lake, Douglas Mathews, and John Henry Blizard.

The President stated that Mr. Joseph and Mr. Strachan Gardiner would both reply to the discussion in writing.

The Secretary formally announced that the next ordinary general meeting of the Institution would be held on Monday, May 10, at 8 p.m., when a paper will be read by Mr. Wm. Allen (Barrister-at-Law), entitled "Summary of Session's Papers on the Acquisition of Land, Tenure, Rating and Housing."

The meeting then terminated.

BUYING A HOUSE:
AN UNCOMMERCIAL SKETCH.

I DO not class myself as a wise man; if you read a little further you will agree with me. But there are worse ways of learning wisdom than listening to the words of a fool. Hence these notes.

Rents were high, tenure insecure, so I determined to become what the rates-and-taxes fiends describe as an owner-and-occupier. To do this I must either buy or build. I resolved to buy.

First I picked out my position; houses were being run up everywhere, so I had a wide choice. I wanted to live on a certain hill outside the town, and at the very spot I would have selected I found men digging out foundations. A speculative builder was about to erect here two structures which he termed villa-residences. Each was to have three rooms up and three down, with bath and pantry. The accommodation met my requirements, and I inquired the price. Two hundred and ninety pounds. The figure struck me as being reasonable.

"If you don't clinch the bargain at once," said the builder, "somebody else will. Put down twenty pounds and the house shall be yours."

It did not occur to me that I ought to see the specifications. I did not even ask to look at the plans. I was buying a villa-residence; that was good enough for me. I put down twenty pounds. The builder took it up.

That was all the money I had in the world. But I am an optimist. I believed I could borrow the rest.

How should I go about this? I might apply to some private person who wished to invest in a mortgage, say at 5 per cent. But such a person might take it into his head to call in the loan, and in that case I should be put to the trouble and expense of borrowing again in order to pay off the first loan. Indeed the process might take, as it were, a serial form; that is to say be repeated periodically, and as each fresh borrowing would entail a fresh mortgage, and solicitors do not draw up the necessary documents for nothing, I thought I would fight shy of the private lender. Please understand, however, that I claim no credit for such a shrewd resolve. The idea was not spontaneous, but was put into my head by the tout to a building society. "Borrow from us," he said.

What is your notion of a building society? Mine was that it consisted of a band of working men associated for the purpose of enabling each other to become the owners of house property, and that the organisation was of a purely philanthropic character. But I soon found that my opinion needed correction, and as far as my experience goes building societies are every bit as commercial as pawnbrokers.

In the town where I live there are two of these societies. One charges a little over 8 per cent. for all loans; the other is content with 6½ per cent. The former collects interest and principal by a system of monthly contributions rigidly enforced; the latter makes easier terms with the borrowers, and does not fine them, provided they pay up the interest and reduce the principal a little every year.

I interviewed the secretary to the more lenient of these institutions, and after due inquiries had been made, he said I might have £240. I then explained to him just how I was situated, and, introduced by him, I was able to borrow at 6 per cent. another £40 from a bank. With the £280 now at my disposal, in due course I paid the builder the £270 owing to him, the remaining £10 went in legal and other expenses necessary to complete the transaction.

And now, to put the matter somewhat euphemistically, I live in my own house. There is a certain satisfaction in making the boast, but I cannot rid myself of a suspicion that I have, as it were, paid too dear for my whistle. Interest, £18; ground rent, £2; rates and taxes, £6; painting and repairs, £4; these items add up to £30 a year, whereas I could rent a similar dwelling for £22. By exchanging the status of a tenant for that of an owner-and-occupier, I am losing money at the rate of £8 a year.

But that is not all I lose. It seems to me that I have forfeited my freedom; bound to one spot, I am no more than a tethered ass. Some day I may be called away to edit the *Times*; or a bone factory may be erected next door. In either case I shall want to sell my house. And who will buy it?

I do not wish to be hard upon the builder. As a contractor the poor fellow was on his last legs, and the people who financed him charged 20 per cent. for the risk. Under the circumstances, and knowing that I had no hold upon him, the harassed man was tempted to put in a lot of inferior workmanship. To the best of my belief, he succumbed to the temptation every time it was offered; for now I find that the doors warp, the windows rattle, rain percolates through the ceiling, great cracks run down the walls, and a high wind sets the slates flying. These are only a few of the drawbacks incidental to living in a product of the jerry builder. Without being uncharitable to a man in the toils, I think I am justified in saying that I should have been much better pleased if he had made it easier for me to sell what may one day be an encumbrance.

But not only am I bound topographically to one spot; I am also bound financially to the building society and the bank. It was a saying of Disraeli's that debt, in so far as it stimulates to activity, is a blessing. With me that is eminently true; for since I took upon my shoulders the burden of these monetary obligations, energy and thrift have redoubled. In this particular, if in no other, I have found house-buying an unqualified success. The stimulus is not without its sting, but the effect is salutary. I know I must work and save, and so working and saving are becoming habitual. By the time compulsion is removed, and I have paid for my house, probably the habits will be fixed. If that be so, I shall come out a moral gainer.

Thackeray tells us that he who has never been a fool will never be a wise man; and so I am hoping that the path of foolishness may eventually lead me to wisdom, but I wish the way were not so rough. I have tramped along with much soreness of foot; perhaps this warning may smooth the surface for others.

AN ARTIST'S GIFT TO FRANCE.

On April 10 President Poincaré opened in the Luxembourg an exhibition of etchings by Mr. Frank Brangwyn, which the artist has presented to the French nation. The pictures, about eighty in number, were executed during the past fifteen years; amongst them are "The Buccaneers," with scenes in Morocco, London, etc. In his letter addressed to M. Leonce Bénédite, Curator of the Luxembourg Museum, Mr. Brangwyn describes his gift as being also a tribute to "the splendid soldiers of France."

TOWN AND RURAL PLANNING.

A CONFERENCE of local authorities was held in London last week under the auspices of the National Housing and Town Planning Council.

Councillor F. M. Elgood, J.P. (Chairman, Ruislip-Northwood Urban District Council), who presided, said that in view of agricultural development the need for rural planning was obvious. Town-planning matters had perhaps obscured the question of rural planning. The conference accordingly proposed to consider the question of new roads, the fixing of building lines on existing or projected roads, the limitation of the number of houses and size of buildings, and the provision of playing and recreation grounds. An end must be made to the ugly rows of houses which lined our country roads.

The conference opened with a discussion of the Ruislip-Northwood town-planning scheme, and a discussion took place on the question of the number of houses that should be allowed to the acre.

The Chairman favoured a limitation of twelve to the acre, but other speakers said it was inadvisable to fix a maximum. The Secretary of the National Town Planning Council, Mr. H. R. Aldridge, said that the effect of the Town Planning Act had been to reduce the price of land. They were reaching the point at which the health of the people should determine the price of land, and not the price of the land the health of the people.

The Town Clerk of Ruislip suggested that it was inadvisable to allow shops to be erected in the midst of private dwellings. The ideal was the old market, in which all the shops were grouped together.

Mr. Angel (Beckenham) remarked that the scheme had been tried in Beckenham and had proved a complete failure. The shops in the district set aside for this remained empty, and it had been found necessary to permit of the appearance of the shops in the streets set apart for dwelling-houses.

Professor Adshead (London University) thought that certain areas might be set aside for shops, but that the rule should not be so rigid as to prevent the overflowing of the shop into the residential districts where it was considered advisable.

On the question of open spaces Mr. Aldridge said that he was convinced that landowners in the future would be more in touch with the local authorities, and would see that it was often to their advantage to surrender a part of the land for road-building or open spaces, to enhance the value of the remainder.

Mr. Aldridge, in opening a discussion on the space about buildings, said that the law as to building lines was one of the most unsatisfactory laws which exist. If in any new street a man built up to any line, that determined the point to which other buildings might be placed.

In a paper on the planning of rural areas, Mr. Aldridge estimated that the local authorities of Great Britain had had to pay sums in the aggregate of £10,000,000 to £20,000,000 in the last thirty years as a result of the lack of foresight and power in regard to the proper planning of roads. There could be no doubt that a similar waste of money would ensue if a great increase in the traffic of rural roads found local authorities unprepared with proper schemes of development and if no steps had been taken to secure proper building lines on existing country roads, so that all future buildings on such roads should be set back at a sufficient distance from the centre of the road to allow future widening to take place without the removal of costly buildings. It would also be difficult to fix the direction of new roads unless all authorities were compelled to make plans for their districts. To meet the housing needs of rural districts in England and Wales it was computed that from 100,000 to 120,000 new cottages were needed, and there could be no doubt that we were entering on a period of cottage building in rural areas on a large scale. In those villages in which there was no village green or playground it would seem to be highly desirable that as new houses were built, either by private enterprise or by public action, land should be secured for village playgrounds and open spaces. The giving up of land for this purpose might well form part of a carefully-prepared scheme of rural planning.

In a memorandum prepared by Mr. Aldridge, in reference to cottage building during the period of the war and at the close of the war, it was estimated that to meet the normal needs of the country, to keep pace with the growth of population, and to make up the deficit caused by the destruction of unfit houses at least 80,000 cottages should be built every year. Two proposals were put forward: (1) That the State should lend money to public utility societies up to 90 per cent. of the amount needed and for a period of sixty years; (2) that when land has been made the subject of town-planning schemes, when the scale of rents to be charged is a moderate one, when the quality of building is properly supervised, and when the action taken has the approval of the local authority of the district, the provision contained in the Act of 1890 as to the lending of money by the State to private enterprise shall be revised and two-thirds of the cost of building advanced.

Several speakers complained that the "rings" which increased the prices of building materials interfered with cottage building, and it was suggested that a strong resolution should be sent to the Government to stop rings, since they were putting up the price of workmen's dwellings from 10 to 20 per cent.

Speaking on the financial aspect of the rural planning, Mr. Harold Shawcross (Chairman of the National Housing Council) said they wanted some definite statement from the Government as to how capital for building houses in the future was to be found. He thought they should try and press upon the Government to set aside £10,000,000, to be lent at a certain rate of interest, and the money to be open to any local authorities which came forward with reasonable schemes which received the approval of the Local Government Board. If a high rate of interest were fixed, there ought to be some provision that if the rate decreased the local authority should be able to borrow the money at the lower rate and wipe out the higher loan.

The scheme referred to in our last issue (p. 379), of assisting architects, surveyors, and others who have lost their incomes through the war was discussed. It was urged that the scheme, which would be of great service to the community, would employ the energies of professional men who had lost their work owing to the war. The scheme had been before a Government Committee, which had recommended it to the Prince of Wales's Fund. The Government Committee was prepared to pay up to £2 a week to the men who would be employed on the scheme.

The delegates from Barking and Tottenham maintained that the working-classes would object to money being taken from the Prince of Wales's Fund for such a purpose. Other delegates pointed out that the Fund was contributed to by professional men throughout the country, and that the money could be rightly used to help members of the professional classes. Moreover, the Government had appointed a Committee of the Cabinet to consider the question of dealing with unemployment among professional people, and it had decided that the Prince of Wales's Fund was available for that purpose. The Chairman remarked that the conference was not concerned with the question of the men employed on the civic survey being paid out of the Prince of Wales's Fund. It was sufficient that the work was going to be much better done with the assistance of the local authorities, and would prove of great value in preparing town-planning schemes.

The following resolution was carried: "That this conference of local authorities approve the proposal that a series of plans and diagrams showing in a graphic form the problems of the Greater London area should be prepared in accordance with the proposal placed before the Government Committee, and in order to assist in the work approve of the formation of a committee of representatives of each local authority represented at the conference, with other representatives to be nominated by the local authorities not represented, to act as an Advisory Committee with regard to the work."

REGENT-STREET QUADRANT.

In the House of Commons Mr. Hinds asked if the Crown Surveyor had yet been instructed to prepare plans for the rebuilding of the Quadrant, Regent-street; if the Crown tenants had been consulted; and if consideration would be given to the style and suitability of the same for their trading requirements.—Sir Henry Verney replied that the Crown Surveyor was preparing amended designs for the completion of the rebuilding of the Quadrant. The views of the Crown tenants were well known, and consideration was being given to all reasonable trading requirements.

BEAUTY IN ARCHITECTURE:

THE LOGICAL EXPRESSION OF STRUCTURE.*

THE lecturer said that he considered that we should never make any satisfactory progress until we had agreed as to what exactly constituted "architecture." Rule two of the Doric Club sets forth that the purpose of the club shall be to facilitate the promotion of "architecture." What, then, is architecture? Architecture is usually defined as "the art of building beautifully," a definition that, whilst generally accepted and good enough in its way, will not be the worse for a little amplification. "The art of building beautifully." No mention of for what purpose we are to build nor of what manner we are to build in. The art of building; that s the first thing. To build—the word "beautifully" merely expresses a quality necessary to the building to differentiate it from mere building as such. As long as we build in a beautiful way, then it doesn't matter whether we use stone or brick, wood or iron, tiles or slates, chalk or cheese, but it *must* be beautiful. Thus, we find that the word "beautifully" expresses the crux of the matter, and so we come to the consideration of what constitutes beauty in a building.

That the beauty of a building or any other work of art is chiefly dependent upon its design is so obvious as to require no exposition. The principles of all types of design are parallel, but like parallels of any kind never converge to quite the same thing. Architecture is different from all other forms of art in a more or less marked degree, because it is chiefly functional in character, whereas the others are chiefly instinctive. The art of architecture is organic, because it possesses positive functions, and its forms spring directly from causes. The degree of satisfaction to which any form attains is in direct relationship to the success with which that form expresses its function. Thus it may be said that the beauty of a building depends upon the degree of the logical expression it exhibits of its functions, and the ugliness of a building depends upon the incompleteness or absence of such logical expression.

During the ages in which our architecture has been evolving, the governing principles of the proportion of form to cause have naturally come to be the better understood in exactly the degree the art has developed. Criticism or appreciation of any form of art may be of two kinds—namely. either instinctive or the result of logical reasoning. For example, in architecture a column is used to support a weight, and without the weight above would be illogical, as it would have no function. Hence, t, appear beautiful it must not only be shapely, but it must actually appear to be doing the work which it in fact does do. The sight of a large column supporting little or no weight appears instinctively wrong, but it can also be proved to be wrong by logical reasoning, because the column has a positive function to perform proportionate to its dimensions. This is why I affirm that architecture is chiefly a functional art, whereas the other arts are chiefly instinctive. For example, imagine an oil painting of Atlas supporting the universe. The appearance of the shape of a man produced by different colours in the paint instinctively suggests to us the figure's function, but the paint that produces that suggestion is not, in fact, supporting anything. The paint has no positive function, unless it be that of preserving the canvas it covers! In the case of an architectural feature, however, the feature not only expresses a function, but it actually executes that function, otherwise its appearance is false.

In the same class as painting falls music, because what positive function can a bar of music possibly possess? However well it may express a function, it cannot possess any function in the positive sense. So we see that, in common with engineering, architecture must be logically functional. The engineer designing a steel bridge places the various members where each has a function to perform, and designs each member according to the most economical method of accomplishing that function, but he does

* Extracts from a paper read before the Newport Doric Club on March 19 last by Mr. F. Radford Smith.

not intentionally endeavour to proportion its form in a beautiful way.

Notwithstanding the lack of any intentional aim for beauty, however, many engineering works might be classed as architecture; because of their logical expression of function they stand before us as beauty unadorned. From this we may deduce the inference that the more utilitarian a structure is the more logically expressive of function will it be and the less of instinctive art will it possess. Thus, in a warehouse we expect (and generally find) the most frank admission of the function of the parts unadorned by any conventional forms. So in a painting of still life we expect (and generally find) that which instinctively suggests in the simplest manner the forms of apples and grapes.

In the more advanced types of pictorial art, however, we find the instinct appealed to by the conventional use of organic forms which during the ages of evolution have come to possess conventional expression. For instance, the uncultivated mind can see nothing in such a work as Sim's "Wood Beyond the Wold" beyond a meaningless composition of acceptable forms. The atmosphere of the abstract spiritual state intended by the artist is lost to them. The art of architecture is an exact parallel, because many of the forms we use daily are really nowadays conventionally used, and though possessing positive function in the first case, now appeal chiefly to our instincts. Perhaps I should say to educated instincts, for by the uneducated mind only the simpler forms are capable of being understood. But, whilst being a parallel, it is not the same, because, although in certain cases there is much of instinctive nature in architecture, the matters of greatest import to the art are positively functional, and even those which may be regarded as more or less instinctive nowadays in every case originated in positive function, and hence are not purely instinctive in character. Further, in the overwhelming proportion of modern buildings there is little scope for much of the instinctive side of the art

Even in buildings whose nature is such that they are intended for such purposes as appeal chiefly to our senses, such as theatres, churches, etc., the greater part of such appeal they make usually depends upon the sculptural and decorative adjuncts rather than to the architectural *motifs* employed. Of course, the purpose of the buildings dictates the general form in plan and mass, and thus decides to a great extent the type of construction to be employed, but that is mere building, and it is the visible expression of that construction in architectural terms that raises the work to one possessing any artistic merit.

I have just said that whilst the art of architecture is mainly functional, many of the terms now used to express it may be classed as instinctive art, but that, unlike art that is purely instinctive, all such terms in architecture had their origin in positive function, and hence can only be used logically when they accord with those general canons of the rational proportion of form to cause that have become essential with the evolution of the art.

In order to make the matter more clear I propose that we very hurriedly glance over the chief outstanding examples comprising architectural tradition, and so endeavour to show that it is to the logical expression of function that the beauty of any work of architecture has owed its existence. We will not go back to the era of the basic protoplasm, or we should be in danger of losing ourselves in a maze of antagonistic conjecture.

The lecturer then illustrated his points by a number of slides of historic examples.

The speaker then went on to say: Inside St. Paul's Cathedral the huge mass of the piers supporting the dome is diminished by forming the space at the crossing as an irregular octagon, necessitating the juxtaposition of arches of different span, which results in a not altogether happy effect. On the exterior, however, the frank admission of the form of the supporting piers is seen in the solidification of every fourth opening on the drum. Had the colonnade been continuous right round one feels instinctively that it would not have been so satisfactory, and so again we see that the logical expression of function produces beauty. One wonders why a similar differentiation was not carried up to the ribs of the dome itself. In Wren's warrant design the treatment is much more rational, and appears to be carried to its logical conclusion, gradually diminishing as the weight lessens. In the Radcliffe Library we have the most logical treatment apparent in any dome in England, even to the buttresses from the base of the drum to the outer walls, where their function is taken up by the coupled columns.

The lecturer concluded by saying: The theory upon which this paper has been based is that the art of architecture lies in the logical expression of purpose as evinced in plan, construction, and in the reasoned use of the conventional forms. In order to be equipped to do this the aspirant to architectural fame must possess a knowledge of many things. First and foremost he must possess a thorough knowledge of the evolution of the art, in the sense that he shall understand the causes underlying the logical relationship of form to cause. These cannot be acquired from the study of any one style or country, but are the result of the tradition of every style and race, having as their fountain head a common source buried in antiquity.

This knowledge of tradition does not mean the absorption of a stupendous multitude of specified examples, but rather a clear and exact comprehension of the contemporary conditions which rendered the features necessary and the reasons why they became manifested in the forms they did. Even when that is achieved it becomes necessary to guard against a temptation to insufficiently appreciate the just demands of new and present conditions.

Mr. Hilaire Belloc puts the matter as follows:—

"Every man bears within himself not only his own direct experience, but all the past of his blood; the things his own race has done are part of himself, and in him also is what his race will do when he is dead. This is why men will always read records, and why, even when letters are at their lowest, records still remain. Thus, if a diary be known to be true, then it seems vivid and becomes famous, where if it were mere fiction no one would find any merit in it.

History, therefore, once a man has begun to know it, becomes a necessary food for his mind without which it cannot sustain its new dimension. It is an aggregate of human experience, nor, other things being equal, is any man's judgment so thin and weak as the judgment of a man who knows nothing of the past. But history, if it is to be kept just and true, and not to become a set of airy scenes fantastically coloured by our own later time, must be continually corrected and moderated by the seeing and handling of things."

So, you see, without a knowledge of tradition it is impossible to produce anything, but the very exercise of that knowledge can but be a hindrance to the production of anything except that which is fantastic unless such knowledge is tempered with due regard to the spirit of our own time. The exercise of uncultivated individuality, however enterprising, leads one aimlessly astray, and is grotesque in that it signifies a more colossal conceit than reason can justify. At the same time, the exhibition of pure scholarship without enterprise leads nowhere and results in stagnation. For our art to be a living art it must acknowledge as its driving force the spirit of the age, tempered only by the reasoned logic of tradition. The restraining influence of scholarship is essential to check the aimless exuberance of the ignorant, which if unchecked produces such abortions as *l'art nouveau*. To sum up in the words of one we all admire if we do not wholly follow:—

"What is needed is not to teach the body of the nation to know something of art, but to teach the artists of the nation to know much of other things.

It is not to give an artist's education to the populace, but a gentleman's education to the artists."

ROYAL ACADEMY EXHIBITION.

As the galleries of the Royal Academy are not required for the annual dinner, which will not take place this year, the President and Council have decided to make the cards of invitation to the private view of the summer exhibition available for either April 30 or May 1, from 10 a.m. to 7 p.m. The public will also be admitted to the exhibition on May 1 on paying an entrance fee of 5s.

GENERAL NEWS.

New Academicians.

At a general assembly of Academicians and Associates Messrs. Edgar Bundy (painter), Charles L. Hartwell (sculptor), and Glyn W. Philpot (painter) were elected Associates of the Royal Academy.

Ventilation of Schools.

In the House of Commons Dr. Addison, as representing the Board of Education, was questioned by Mr. King with regard to the ventilation of schools, and was informed that the architect to the Board took part in the experiments made at Birkenhead in November, 1913, into the ventilation of schools. He did not submit any formal report.

Mr. King further asked if the President was aware that a special system of ventilation had been installed, with eminent success, in fifteen schools in Glasgow, three schools in Liverpool, six schools in St. Helens, two schools in London, and in many other places, and that the cost of this system was not now allowed to be provided for by loans sanctioned to education authorities; and whether, in view of the alleged effectiveness of this system and the satisfaction given to local authorities who had installed it, an inquiry into it would be undertaken and the results published for guidance in building?

Dr. Addison said the sanctioning of loans was not a matter for the Board, and he saw no reason for making the inquiry suggested. The Board had very carefully considered the subject of ventilation, and found that most methods were considered to be the best by their supporters.

Carpenters' Hall Lectures, University College.

The course of Carpenters' Company Lectures on "The Architecture of Belgian Towns" will be resumed at University College on Thursday, May 6, at 5.30 p.m., when Mr. Arthur Stratton will lecture on "Bruges and Ypres." The chair will be taken by his Excellency the Belgian Minister. On Thursdays, May 13 and 20, at 5.30 p.m., Mr. Patrick Abercrombie, of the University of Liverpool, will lecture on "Brussels." The Chairman at his first lecture will be Sir Herbert H. Bartlett, Bart., and at his second lecture the President of the Royal Institute of British Architects, Mr. Ernest Newton. The lectures are open to the public without fee. Applications for tickets which should be accompanied by a stamped, addressed envelope, may be made to the Secretary, University College, London (Gower-street, W.C.).

King's College New Buildings, Campden-Hill, W.

In the course of next autumn the Department of Household and Social Science of King's College for Women (University of London) will migrate from Kensington-square into their new buildings that have been erected by Messrs. Wallis & Co., of Maidstone, upon the site of Blundell House, on the west side of Campden Hill-road. These are now being completed after the plans and designs of Messrs. H. Percy Adams and Charles Holden. The plans comprise the Queen Mary's Hostel for Women Students, which contain sixty-three bed-sitting-rooms, and the laboratories, together with other apartments for the teaching of biology, physics, chemistry, physiology, hygiene, practical household and domestic work, and so on. The buildings are constructed of red brick with white stone dressings, and stand around a quadrangle. Of the £100,000 as yet subscribed—and £40,000 more is needed for the full development of the project—a sum of £40,000 was set aside for building purposes.

Government Housing Scheme.

In a Report submitted by the Building Acts Committee of the London County Council at the last meeting it was stated that they had received a proposal from one of the principal architects to H.M. Commissioners of Works for laying out an estate in Woolwich, and for the erection thereon of a large number of houses for the accommodation of workmen employed at Woolwich Arsenal. The Committee stated that they had made several suggestions for alterations in the scheme, which they understand will be adopted. They are, however, informed that the Commissioners hold the opinion that the London Building Acts do not apply to

schemes carried out by the Commissioners in London under the Housing Act, 1914. In view of the special circumstances which made the execution of the scheme a matter of extreme urgency, the Committee have refrained from raising the question of the extent to which the London Building Acts apply to this particular scheme; but they have caused a letter to be sent to the Commissioners informing them that the Council cannot accept the view that the Building Acts do not apply to such schemes, and that the action taken in this particular instance must not be construed as in any way prejudicing the Council with regard to the point should it hereafter be thought fit to raise it in relation to any similar scheme which may be put forward in future.

Royal Engineers.

The 1st London Divisional Engineers have recently enlisted a larger number of recruits as a result of the special efforts put forth, but further men are still required for both Field and Signal Companies in the third line formations. Men urgently required are those connected with the building contructional trades, bricklayers, carpenters, harness-makers and saddlers, blacksmiths, wheelwrights, shoeing-smiths, telegraphists, electricians, instrument makers, telephone operators, and men accustomed to horses. The 1st London Field Company has received very high praise for its work in France, the men having carried out their special work of preparing defence works, making temporary roads, bridging streams and water channels, cable-laying and the establishment of field telegraphic communications, etc., under very hazardous, hard and trying conditions. The need for skilled men is great, and, of course, the pay is proportionately higher than in most other arms of the Service. Full particulars can be obtained by application—personal if possible—to Headquarters, 10, Victoria Park-square, Bethnal Green, N.E., or to the Branch Recruiting Office, 451, Edgware-road, W.

Town Planning, Nottingham.

The proposal by the Corporation of Nottingham to prepare a scheme of town planning for some 600 acres of land lying between Mansfield-road and Nottingham-road was the subject of an inquiry by one of the Local Government Board inspectors, Mr. Raymond Unwin, F.R.I.B.A., at the Guildhall, Nottingham, recently. The Town Clerk (Mr. W. J. Board) said the land was undeveloped, save for a hosiery factory and a few cottages, which would not interfere with the scheme. It was proposed to have a main arterial road, probably 80 ft. wide, running along the Day Brook, and a 60-ft. road along the bridle-path to the south of the prison. Land would be reserved for a recreation ground or grounds and other public purposes, and Edward's-lane, part of Hucknall-road, and part of Nottingham-road would be widened. With the exception of the railway companies, no objection had been raised by the owners of the land. The development of the city was largely going on in the direction of this land, and the area itself was likely to be used very shortly for building purposes.

Academy of Dramatic Art, London.

The new premises in Malet-street, Bloomsbury, of the nursery of the dramatic arts, founded twelve years ago by Sir Beerbohm Tree, are nearly ready for occupation. They have been built by Messrs. C. F. Kearley, Ltd., after the designs of Messrs. Swan & Norman. The theatre, by Mr. Geoffrey Norman, stands on the ground between Malet-street and the garden of their houses, Nos. 62-64, Gower-street. The offices, with the class, rehearsal and dressing-rooms, have their frontage in Malet-street. The stage is 42 ft. by 34 ft., with a proscenium opening 24 ft. wide, and is fitted with all the latest appliances. The stage being flat the pit or *parterre* has a decided rake; the auditorium, licensed for 300 sittings, has a gallery and two boxes for the judges or critics of the performances. As the stage will be often used in the daytime, the theatre is lighted through wide openings in the half-dome and by windows that can be darkened when it is desired.

Terminus Hotel, Baker-Street Station.

An extensive clearance is being made of houses and residential flats in Marylebone-road, Upper Baker-street, and Allsop-place, for the Terminus Hotel, to be built by Mr. J. Carmichael after the plans and designs (for 780 rooms) of Mr. F. J. Wills. In our issue of September 12, 1913, we published a plan of the whole site, and an illustration of the Marylebone-road elevation, which will rise to a height of nine stories above the street level, and will extend along the entire frontage from the circus at Upper Baker-street to the corner of Allsop-place, opposite Mme. Tussaud's. The demolition now in progress includes the Church of England Girls' School in Upper Baker-street (for which new buildings have been erected in Park-road, on the site of Tilbury's former warehouses), Clarence-chambers, and the Buffalo's Head Tavern in Marylebone-road, and a portion of Cornwall Mansions in Allsop-place, which were built some forty-five years or more ago, and were, we believe, one of the earliest blocks of residential flats erected in London.

Road Construction and Maintenance.

On the 13th inst., at a meeting of the Society of Engineers (Incorporated), a paper on "Main Roads, Past and Present; and Modern Methods of Construction and Maintenance" was read by Mr. Frank Grove, Assistant County Surveyor of Surrey. After summarising the development of roads in England from the time of the Roman occupation, the author referred in greater detail to the methods of construction in use immediately before the introduction of motor vehicles, and pointed out the effect that was produced on these roads by the greater weight and speed of this new form of traffic as compared with the horsed vehicles which they extensively replaced. He then described the nuisance arising from dust, the extensive damage done to the existing road surfaces, and the means taken to minimise these troubles, due to the radical changes in the character of the road traffic. The remainder of the paper was devoted to a review of the latest developments in regard to the construction and maintenance of road surfaces, and included descriptions of some of the methods used in the County of Surrey, the main roads in which are more used by motor cars than those of any county around London. Details were given of the mode of construction and comparative cost of water-bound macadam, tar macadam, pitch-grouted macadam, wood-block paving, and bituminous surfacing, and an illustrated description of a drying and mixing plant for bituminous materials was included. The paper closed with a brief description of the aims and activities of the Road Board.

THE LONDON COUNTY COUNCIL.

THE first meeting of the London County Council, after the Easter recess, was held on the 27th inst., in the County Hall, Spring-gardens, S.W., Mr. Cyril Jackson, Chairman, presiding.

St. Pancras, E. — Additional Permanent Accommodation for Physically Defective Children.—On the recommendation of the Education Committee it was agreed to provide a new school for sixty-five physically defective children on the Bayham-place site (St. Pancras, E.).

List of Streets and Places.—The Local Government, Records, and Museums Committee reported that the supplement for 1914 to the list of names of streets and places in the administrative county of London has now been printed and placed on sale at the price of 2d. a copy. Notes giving the origin of many of the names are included.

Waterlow Park—Repairs to Fairseat House.—It was agreed, on the recommendation of the Parks and Small Holdings Committee, that the special estimate of expenditure on maintenance account of £100, submitted by the Finance Committee in respect of the execution of certain repairs at Fairseat House, Waterlow Park, be approved as an estimate of costs, debt, or liability under section 80 (3) of the Local Government Act, 1888.

Machine Ruling.—On the recommendation of the Stores and Contracts Committee, it was agreed to invite tenders from selected firms for machine ruling for the tramways department.

Invitation of Tenders.—The Education Committee reported that they have decided to invite tenders for (1) Adaptation of house in Walker-street, Limehouse, as temporary housewifery centre; (2) erection of iron building at Montem-street School, Islington, N.; and replacing steam boiler at Hackney Downs School, Hackney, S.

New County Hall.—The Establishment Committee reported that they have accepted the quotations of Messrs. Doulton & Co., Ltd., for the sanitary fittings required at the new County Hall; and that they had arranged that Messrs. Ames & Hunter, the sub-contractors for the supply of roof tiling required for sections A, B, and C of the New County Hall, shall also supply on the same terms the roof tiling required for section D of the new building.

Old Oak Estate, Hammersmith.—The Housing of the Working Classes Committee reported that they had sanctioned expenditure on maintenance account not exceeding £100 for the repair where necessary of the temporary paths under the Council's control in Old Oak Common-lane and Dunsany-road, where these roads border on the Old Oak Estate.

Supply of Paints, etc.—Examination of Samples.—In a report submitted by the Stores and Contracts Committee it was stated that in response to representations made to the Committee on behalf of the trade they have arranged that, when tenders are invited in future for the supply of paints, colours, varnishes, etc., in accordance with the Council's standard samples, the forms of tender shall be issued sufficiently soon to give to firms adequate time, before tenders are submitted, for the analysis and examination of samples corresponding to the standard supplies.

Places of Public Entertainment. — The Theatres and Music Halls Committee have approved the arrangements indicated to the undermentioned premises:—229, Battersea-park-road, separation of the cinematograph hall from adjoining premises by fire-resisting materials and improvement of sanitary and ventilation arrangements; 172-184, Cambridge-road, alteration to the engine-room; 226, Commercial-road, construction of draught doors; 28-32, Denmark-hill, provision of access to open space at rear; Durham-row, Stepney, covering in of approach passage; Globe Theatre, Shaftesbury-avenue, alterations with a view to obviating draughts and the noise of passing traffic; Great Western-road and Hormead-road, Paddington (Great Western Cinema), alterations to seating and re-arrangement of main entrance vestibule, etc.; Hammersmith Town Hall, alterations to exits from the licensed portion arising from a proposed extension of the Town Hall premises; 146, High-street, Clapham, erection of dressing-rooms and lavatories, and ventilation of the standing lounge; Holloway Empire, Holloway-road, provision of new operating enclosure and re-winding room; Imperial Hall, Grove-vale, Dulwich, re-arrangement of balcony and erection of draught screens; Islington Empire, High-street, Islington, ventilation of the property store; Kilburn Empire, High-street, Kilburn, re-arrangement of seating on ground floor and provision of backs to the seats in the gallery; Les Gobelins Restaurant (New Gallery), ventilation of new dining-room and kitchen; 137-147, Lower Clapton-road, provision of an additional exit; 560, Mile-end-road, alteration in the seating and gangways; New Bedford Palace of Varieties, High-street, Camden Town, alterations; New Gallery Kinema, 121A, Regent-street, construction of two private boxes at balcony level; Olympia, Hammersmith, provision of new boilers and a new cloak-room; Oxford-street (Electric Pavilion), provision of a cloak-room; 532, Oxford-street (Electric Palace), new ventilation scheme; Philharmonic Hall, Great Portland-street, provision of cinematograph enclosure and re-winding room and alterations to electrical installation; Plumstead Common-road (Globe Cinema), alterations to the vestibule; Prince's Theatre, Shaftesbury-avenue, installation of steam radiators for heating the stage; Ranger-road, Westow-hill, alterations in the sanitary arrangements; 116, Rye-lane, Peckham, provision of a waiting space in the crush hall; 164, Rye-lane, Peckham, alterations; St. Martin's Theatre (proposed), West-street, Shaftesbury-avenue, proposals for complying with certain of the Council's requirements; Strand Corner House, positions for fire hydrants and water mains and details of proposed electrical installation; Surrey Theatre, Blackfriars-road, adaptation of two rooms for use as dressing-rooms and construction of new sanitary conveniences; Wesleyan Methodist Central Hall, Mitcham-road, Tooting, erection of new school adjoining the hall; 221, Westferry-road, construction of an entrance vestibule; Wimbledon-park-road, Southfields, alteration in the exit arrangements at proposed cinematograph hall.

ILLUSTRATIONS.

Italian Palaces.

WE give this week four other illustrations of Italian Renaissance architecture from Verona, comprising the Gran Guardia and Palazzo, Pompei.

Details of House, Smith Square.

WE give an illustration of some detail drawings by Mr. Lutyens for a house at Westminster.

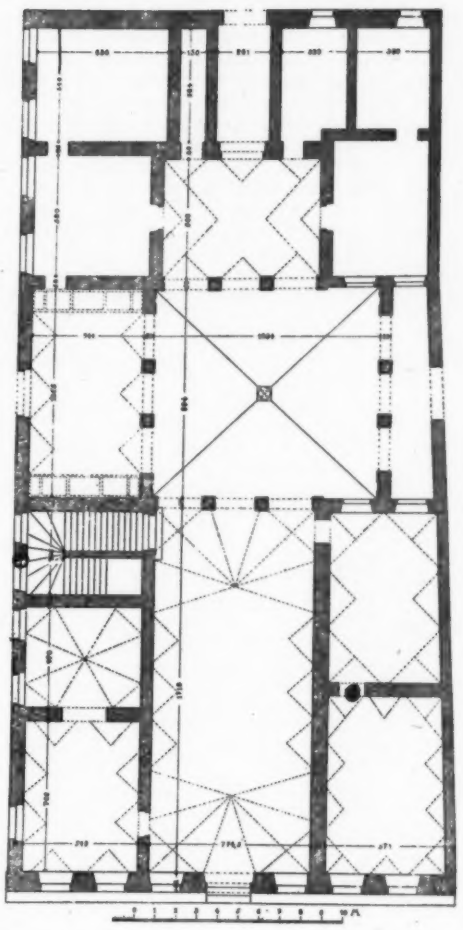
Southport Technical School Competition.

IN this design the authors have endeavoured to produce a good final arrangement (Scheme B), giving all the accommodation asked for, and planned in strict conformity with the latest school regulation. The plan can be adapted for scheme A, utilising the existing front buildings without in any way affecting the structure, as the connection is made by the corridor connecting the administration portion with the school proper. The re-building of the front portion in the future could be carried out without interfering in any way with the school classes.

The various departments of the school are grouped together, facilitating teaching and supervision. The lavatories and cloak-rooms have been placed near the entrance and adjacent to the stairs and have cross ventilation.

The first consideration was given to the lighting of the classrooms, and this has been obtained by maintaining a distance of 35 ft. from each boundary to insure perfect light under any conditions. The authors placed the wood working, plumbing and engineering rooms on the extreme boundaries. This enabled the noisy part of the work to be away from the main building and obtained for these rooms top light. Egress has been provided for motors, heavy machinery, tools, timber, etc., both from the two cartways each side of site and from Lord-street, and these cartways would be available from the approach road when the future extension was built.

It was proposed to carry out the front elevation in brickwork and stone base and the roof covered with green Westmorland slates. The side elevations as suggested in competition conditions were to be carried out in reinforced concrete. The design, by Messrs. S. N. Cooke & Twist, of Birmingham, was placed second in the recent competition.



Palazzo, Pompei, Verona: Ground Plan.

ARCHITECTURAL SOCIETIES.

Nottingham and Derby Architectural Society.

The fifty-second annual meeting was held on Tuesday, April 20. The chair was taken by the President, Mr. Harry Gill, M.S.A.

The Council reported that they had to record the resignation of Mr. Herbert Walker, a Past-President, and the loss by death of Mr. Arthur Marshall (a Past-President) and Mr. H. Wittaker, an Associate. The total membership was now 125, an increase of five over last year.

The privilege of honorary membership, until peace is declared, has been granted to Mr. Van Reybrouck, a Belgian architect at present a refugee in Nottingham. The Council have been in communication from time to time with the Master Builders, Plumbers and Heating Engineers. Six meetings have been held during the past session, including a lecture on Town Planning by Mr. Raymond Unwin, F.R.I.B.A., the recently-appointed Government adviser on this subject. This meeting was arranged as a popular lecture at the University College, and the surveyors and members of the Town Councils of Nottingham, Lincoln, Derby, and other local authorities attended. The Council are proud to state that twenty-four members are at present on active service serving their King and country. In addition to a Town-Planning Committee, an Architects' War Emergency Committee has been appointed. The financial position of the Society is very satisfactory, the year's working showing a substantial balance in hand. Owing to the majority of the junior members being with the colours no meetings of the Designing Club have been held.

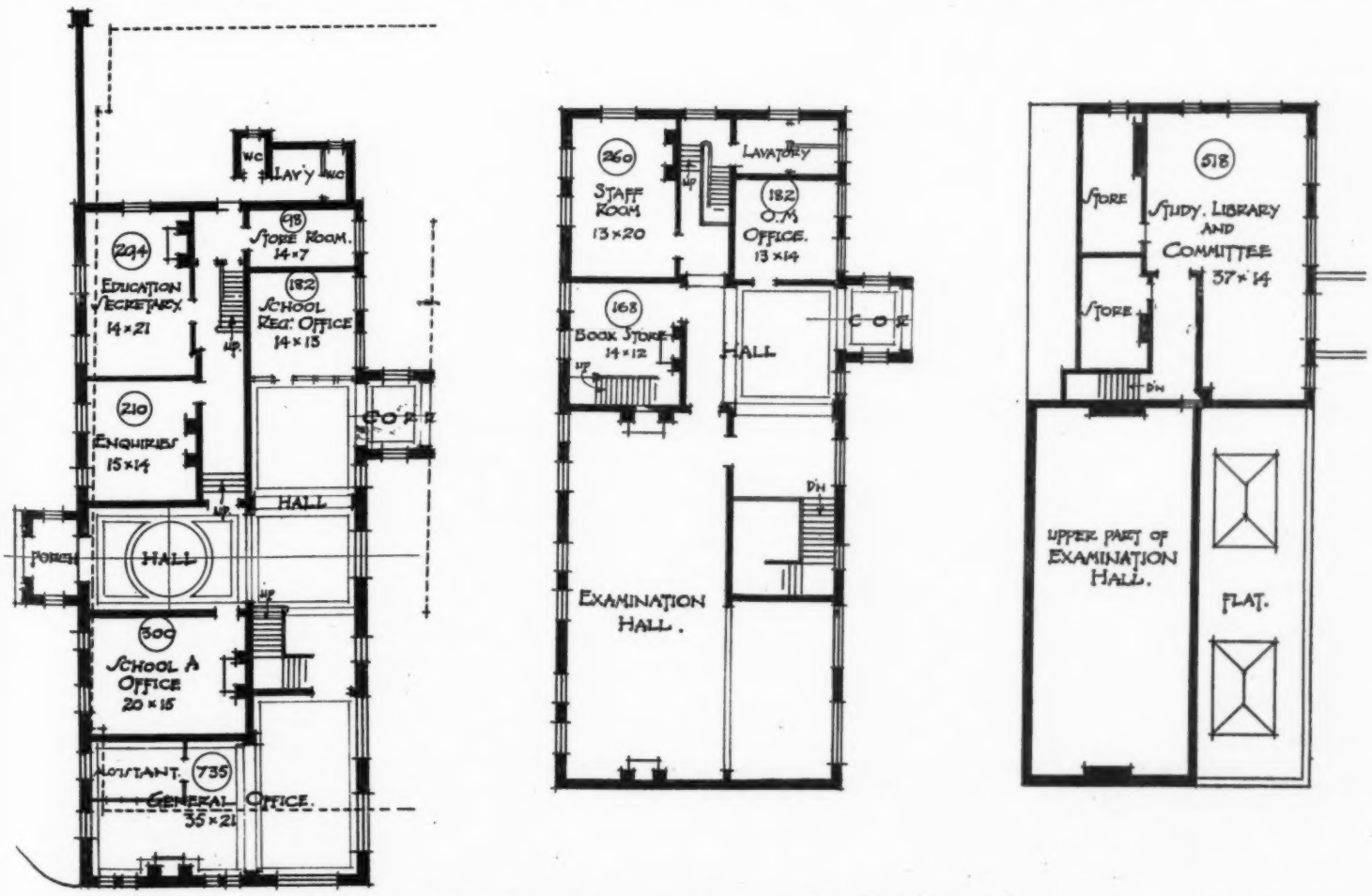
The year's prize-winners are:—

For Measured Drawings—First prize, Mr. D. E. Knight (now a sapper in the Royal Engineers); second prize, Mr. K. V. Weston (O.T.C.). For Vice-President's Sketching Prize—Mr. K. V. Weston (O.T.C.).

The following officers were elected:—

President, Mr. Harry Gill, M.S.A.; Vice-President, Mr. H. G. Watkins, A.R.I.B.A. Council: Messrs. P. H. Currey, R. Evans, W. R. Gleave, A. E. Heazell, T. H. Thorpe, E. R. Sutton, H. P. Gill, C. E. Howitt, R. Spencer; Hon. Secretary and Treasurer, Mr. F. M. Royle; Hon. Librarian, Mr. R. Spencer; Designing Club Hon. Secretary, Mr. J. Woollatt; Auditors, Messrs. F. W. Gregory and R. Spencer.

The meeting also discussed suggestions for the better laying out of streets and buildings and other matters brought forward, after which the customary votes of thanks to the retiring officers were proposed and carried, and the proceedings terminated.



Proposed Technical Schools, Southport: Design Placed Second.

By Messrs S. N. Cooke & Twist.

Leading Contents.

	PAGE
ARCHITECTS' QUANTITIES	395
HOUSES AT HARROW AND SANDY LODGE	397
THE SURVEYORS' INSTITUTION	397
BUYING A HOUSE: AN UNCOMMERCIAL SKETCH	399
TOWN AND RURAL PLANNING	400
BEAUTY IN ARCHITECTURE: THE LOGICAL EXPRESSION OF STRUCTURE	400
GENERAL NEWS	401
THE LONDON COUNTY COUNCIL	402
ARCHITECTURAL SOCIETIES	403
THE FISH MARKET OF VENICE	405
BUILDINGS AND DWELLINGS FOR SMALL HOLDINGS	406
SIR MATTHEW FEATHERSTONHAUGH'S (DOVER NEW HOUSE), WHITEHALL	408
THE BUILDING TRADE:—	
THE MASTER BUILDERS' ASSOCIATION OF NEW SOUTH WALES: SOME PROBLEMS WE HAVE IN COMMON	409
THE LONDON MASTER BUILDERS' ASSOCIATION	409
LAW REPORTS	412
OBITUARY	414

MEETINGS.

MONDAY, MAY 3.

Royal Institute of British Architects.—Eighty-first annual general meeting. 8 p.m.

WEDNESDAY, MAY 5.

Royal Archæological Institute.—Mr. A. Hadrian Allcroft on "Some New Light on Roman Roads in Sussex." 4.30 p.m.

Royal Society of Arts.—Mr. A. Vernon Harcourt on "The Measurement of the Efficiency of Domestic Fires, and on a Simple and Smokeless Grate." 8 p.m.

THURSDAY, MAY 6.

Society of Antiquaries.—Ordinary meeting. 8.30 p.m.

COMPETITION NEWS.

It must be understood that the following paragraphs are printed as news, and not as advertisements; and that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

The list of current Competitions is printed on page 413.

New School, Rosyth.

The Dunfermline School Board have recently considered competitive plans for a large permanent school at Rosyth. The Board had promised that the architect of the plans placed first would be entrusted with the work of designing the school, and that premiums of £20, £10, and £5 would be given to those next in order. The successful competitors are:—First, Mr. R. H. Motion, Dunfermline; second, Mr. James T. Scobie, Dunfermline; third and fourth (equal), Mr. Scobie and Mr. David Beveridge, Dunfermline. The Board agreed that Mr. Motion be architect of the new school, which, according to his estimate, will cost £15,181. The Board, however, decided not to proceed with the work at once, but to ask the successful architect to produce a new plan giving effect to a considerable number of alterations. While the Board agreed not to proceed with the erection of the school immediately, they felt that if the Admiralty had 150 houses built in the vicinity by October they would be compelled to begin building operations before very long. The new school will contain twenty classrooms and accommodate 1,000 pupils.

Tuberculosis Hospital, Southend.

The Southend Corporation, at a meeting last week, considered a joint Report of Mr. F. Whitmore, Consulting Architect to the Essex County Council, the Borough Engineer, and the Medical Officer of Health on the competitive designs sent in for the erection of the proposed Tuberculosis Hospital. The Report is as follows:—"We beg to report that seventeen sets of designs were submitted in the above competition. In the first instance each of us independently examined the designs, and later we met upon several occasions in consultation. In arriving at a decision as to the merits of the respective designs we have borne in mind the question of future extensions and have had regard, in the main, to the following considerations, viz.: (1) Position of the several blocks of buildings on the site with a view to the latter being used to the best advantage; (2) the nature of the accommodation provided in the ward pavilions for patients; (3) the general arrangements with a view to the efficient and economical working of the institution. Each of us independently came to the conclusion that designs Nos. 16 and 7 were the best submitted, and, after careful consideration and consultation, we arrived unanimously at the conclusion that design No. 16 should be awarded the first premium and that design No. 7 should be awarded the second premium. We are of opinion that design No. 6 should be awarded the third premium. Design No. 16 is a very carefully-prepared and well-thought-out scheme. The buildings are grouped at the extreme northern portion of the site. The administration block is between the two ward pavilions, all facing south. The dining-hall and kitchen blocks are behind and are connected with the administration block and pavilions by two covered ways. The laundry and disinfecting block is in the rear. The future extension shows, south of the pavilion to be erected forthwith, a pavilion with further accommodation for adults and special provision for children. In design No. 7 the buildings are placed approximately halfway down the site, with the administrative block on the west side facing west, and the ward pavilions on the south side, with kitchen block at the rear and connected by covered ways. In future extensions an additional ward pavilion is proposed north of the kitchen block. We recommend that all designs be placed on public view and a copy of this Report be sent to each of the competitors when their names are known. Designs Nos. 16 and 7 are, in our opinion, the designs which require the least modification to secure the type of institution most suitable for local conditions. Having regard to the position on the site and the grouping of the buildings, we are of opinion that design No. 16 is the more suitable for adoption, although certain modifications in detail will be necessary. We therefore recommend that the author be appointed architect, subject to such conditions as the Committee may consider desirable." The Health Committee recommended that they be authorised to appoint the author of design No. 16 architect for the erection of the proposed building, subject to such conditions as they may consider desirable. A short discussion ensued, in which an amendment was moved by Councillor D. M. Neil with reference to the last line of the recommendation—viz., that the conditions should be such as might be considered desirable by the Council. He did not believe in allowing a Committee to make such conditions as they might think desirable. The conditions, he contended, were such as precluded the members of the R.I.B.A. from competing. Eventually a vote was taken, with the result that the amendment was carried. The names of the authors of the successful designs were here divulged. The first award was to Mr. Percy Brockbank, 13, County-chambers, Southend; the second, Mr. H. Law, 42, Deansgate, Manchester; and the third, Mr. J. J. Green, Adelphi-chambers, South John-street, Manchester.

CORRESPONDENCE.

Buildings and Dwellings for Small Holdings.

SIR,—With reference to the plate illustrating essay on "Buildings and Dwellings for Small Holdings" in your issue of the 23rd inst., I notice a peculiar error in connection with the detail of the septic tank which is perhaps worth calling attention to, as this plate may be made considerable use of on account of the valuable details it contains. The error is that the tank labelled "aerobic" has its outlet at the same level as the inlet, which would cause the so-called aerobic tank to stand full of liquid, consequently both tanks are anaerobic, the only difference being that the second is filled with clinker. If the outlet of the second tank is lowered to the bottom this would, of course, cause this tank to become aerobic and make the detail correct.

W. ERNEST HAZELL.

Building By-Laws.

SIR,—I recently received a pulling down notice, No. 13, from the Town Clerk here, of a shed in Benjamin-road, and, as this is a matter of the highest importance to the general community, under the circumstances may I ask, through the valuable medium of your paper, by whose and what authority and recommendation the Public Works Committee and the Town Council intend to take such a drastic and high-handed proceeding without judge or jury, and seeing there's no harm whatever in this in any way impending to the community either, most un-British too? I don't think Mr. Justice Grantham was treated like it, with regard to his objection to the new by-laws, although his were county ones and not town.

This new code of by-laws was introduced by the Local Government Board in the time and under the late Conservative Government, and were made without any regard to the needs and interests of each district and trade, and, moreover, were never put before and passed by the Conservative Parliament at all—a most unconstitutional proceeding—so they cannot claim the authority of even the Conservative Parliament in the matter.

May I ask, too, having regard to the late Conservative Government's Rating and Taxing of Machinery Act (which, by the way, was at least rushed through Parliament), which of the four countries, viz., England, Scotland, Ireland and Wales these new by-laws were made to apply to again? . . .

I am not against by-laws, but I do consider when any new code is made by the Local Government Board they should be made with care and discretion, and not for certain vested interests only; and not only that, but when decided to be adopted should be passed by Parliament before being put into force, and then be applied to all with equality not only to individuals, but to the four countries also, because it naturally follows a good by or other law is as good for one country in the Union as another.

If things are to be done in this way, any Chancellor of the Exchequer, for instance, at any time, may as well decide on his own Budget without reference to Parliament at all, for new by-laws are just as important to the people as Budgets.

WILLIAM GLENISTER.

High Wycombe.

FIFTY YEARS AGO

An Architect's Dirge.*

LIE softly on him, Earth, for he hath laid
A fair and blessed burthen on thy breast;
And now, awhile, he asks a place of rest
Within its holy shade.

Smile calm above him, Sky, for he did trace
The blessed cross against thine azure arc;
And ever faithful bear that holy mark
Above his sleeping-place.

Shine brightly on him, Sun, in thankfulness
For that he prison'd thee in storied panes,
And made thy rays all glorious with fair stains,
Bright as an angel's dress.

Sing to him, Summer Breezes, restfully,
And bring him all the changes and the swells
And fallings of his own fair steeple-bells,
To be his lullaby.

[*** We give the above extract from the *Builder* of April 29, 1865.]

SOCIETY OF ANTIQUARIES OF LONDON.

At the anniversary meeting of the Society of Antiquaries of London the elections of officers and Council for the ensuing year were held, and resulted as follows:—President, Sir Arthur Evans; Treasurer, Mr. William Minet; Director, Sir Edward Brabrook; Secretary, Mr. C. R. Peers. Members of Council: Colonel F. W. T. Attree, R.E., Mr. W. Paley Baildon, Mr. J. N. Bankes, Mr. E. N. Baynes, Mr. W. H. Bell, Mr. H. Brakspear, Bishop Browne, Mr. J. D. Crace, Rev. E. S. Dewick, Mr. D. G. Hogarth, Mr. L. W. King, Mr. William Martin, Mr. Philip Norman, Mr. F. W. Pixley, Mr. D'Arcy Power, Sir Hercules Read, and Mr. C. A. Tennant.

* These lines were suggested by an adaptation of the well-known epitaph "Lie heavy on him, Earth," etc., in your paper of Saturday last. They are not intended to apply to any person in particular.—*θ*.

The Fish Market: View from the Grand Canal.

THE FISH MARKET OF VENICE.

By SELWYN BRINTON.

IN describing recently within the pages of the *Builder* the most interesting "Restaurant of the Sturgeon" at Padua, designed and decorated throughout by Professor Laurenti, I had occasion also to refer to another architectural commission—perhaps the most important in this branch of art in his busy life, and one to which he always refers with justifiable pride—the Nuova Pescheria, the new Fish Market upon the Grand Canal at Venice.

A visit to Venice last spring in connection with the opening of the Eleventh Venice Exhibition of International Art, when I spent some time with Professor Laurenti himself, put me in a position to obtain fuller details and illustrations of this important work, with notes and plans of its construction, and enables me now to offer a record which, I hope, will be of interest.

In old days—that is, prior to 1884—the Fish Market of Venice was near the Rialto, very much in the position which it occupies at present, but held in the open air; and a very picturesque scene it must have been, as depicted in these earlier days by Professor Tito and in an illustration by Cesare Laurenti himself, who, as my readers will know from the illustrations of his fine Paduan restaurant and his world-famed paintings, is a magnificent figure artist as well as an architect.

But however picturesque, however it may have proved a source of inspiration to the painters of the life of modern Venice, this Fish Market remained exposed, especially in winter, to the rigours of the weather—of snow, wind, rain, and in summer, again, of extreme heat; and it was decided, not unwisely, by the Municipality of Venice, in the year 1882, to replace it by a covered building.

The result of this sensible decision took shape some two years later in the most horrible cast-iron atrocity—"*monstrum informe, ingens*"—which has so far ever appeared to insult the inherited beauty of the lovely old city of the lagoons. Although it has, thank Heaven, long since vanished into space its memory survives, in the records of the period, in such epithets as "*enorme, orribile, goffa*" ("huge, horrible, preposterous"); and all artistic Venice, with that famous student of Venetian art and history, Pompeo Molmenti, as its leader, rose to the assault and swept away the enormity.

But it had served its purpose—if only to have set the fertile brain of Cesare Laurenti thinking of how to find a substitute which should be useful, and yet in harmony with the traditions of Venice; and while he was still studying this project the Municipality had acquired the old Palace of the Querini, adjacent to the Fish Market, called sometimes, from its vast size, Cà Grande or Cà Mazor, but more generally known to Venetians as El Stalon.

This fine palace, which could now form part of the building to be erected, necessarily affected very materially, both in its architectural features and position, the project which was forming in Laurenti's mind; and he gained a further inspiration, in the question of style and treatment to be adopted, from that famous painting by Vittori Carpaccio within the Academy of Fine Arts at Venice, which represents the healing of a demoniac by the Patriarch with a relic of Holy Cross, and shows in its background the Rialto, as it then was (of course it has been rebuilt since), and the buildings which were adjacent on the Canalazzo. Here, then, was the basis of Laurenti's fine achievement—the position, purpose, and spacing of the building looking out on the canal; the old Querini Palace, of about the year 1340 in design, which was to be included in the new construction; and the inspiration of a great picture which dates from a Venice not so far removed from the same period.

But Laurenti, though a painter and critic of genius, and well acquainted with the principles of architecture, was not a professional architect, and therefore he very wisely decided to avail himself of the services of a collaborator in the profession.

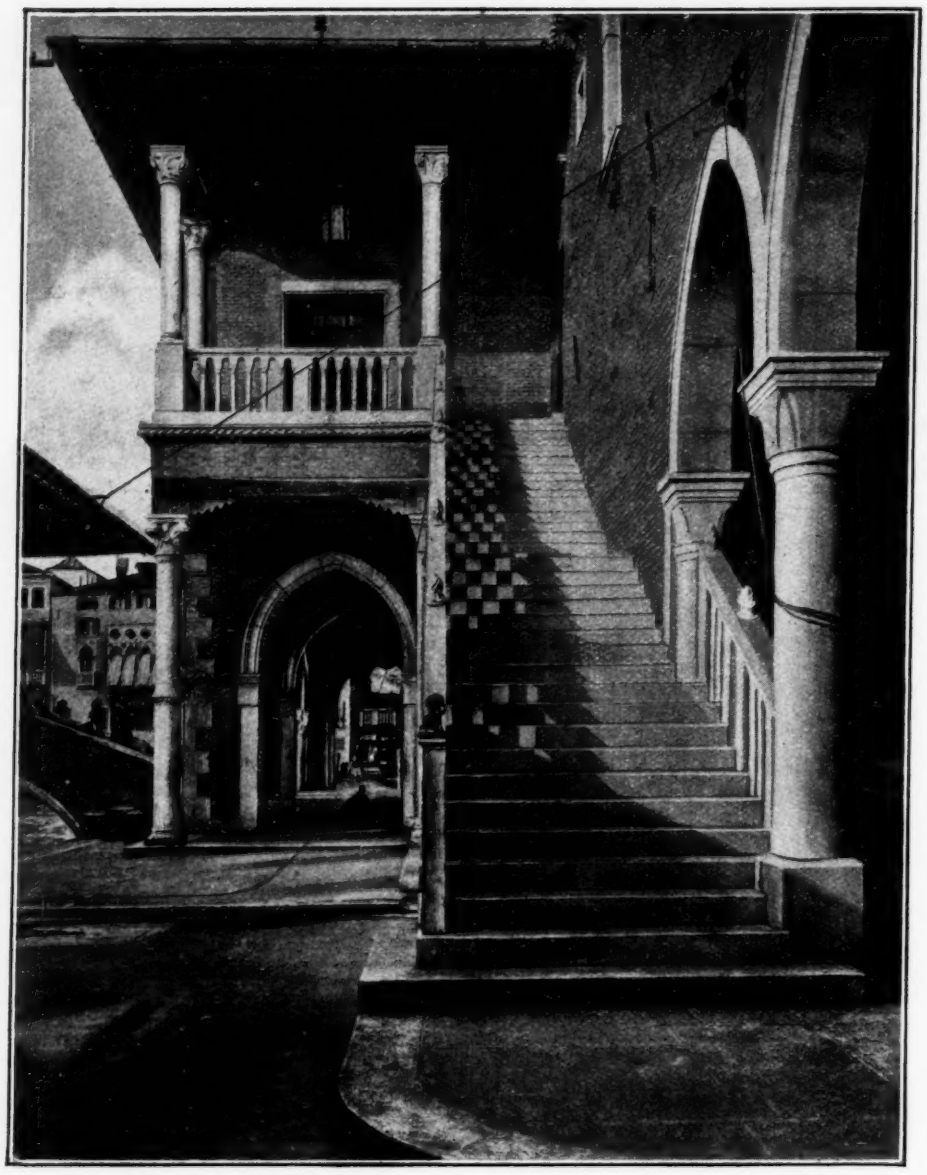
"Without petty preoccupations," he says himself, "of losing some part of the merit of my beloved vision and of my long labour of love, I betook myself to Domenico Rupolo, then at the commencement of his career, but already known and favourably thought of, though not so highly as his merit deserved. I put him in possession of my idea, and showed him all the fruit of my labours. And he accepted at once, with enthusiasm, the collaboration which I had proposed. . . .

Rupolo, with all his modest appearance, is a force, real, living, secure in his acquirements, like the great spirits in which our Renaissance was so rich. Girding himself to the work, Rupolo developed from my plans the new plans for the definite project.

With great judgment he proposed to readjust the number of arches employed in the façade of the Fish Market, a suggestion which I promptly and willingly accepted, as in this way serious difficulties of an economic character were overcome without my vision being altered in any essential particular.

Certain other modifications of a secondary character were also made, always discussed and harmoniously agreed on together.

Thus the project was completed, still preserving all its æsthetic and organic unity; and the Laurenti project, now become the Laurenti-Rupolo project, was presented to the Municipal Committee. However, in view of certain observations made by a few very intimate friends, who were not satisfied, having seen the project, at the treatment given to El Stalon (among the first of whom was Pompeo Molmenti, that warm and



Stairway, Fish Market, Venice.

vigorous defender of the beauty and integrity of our Venice), a second project was put in hand, by which El Stalon was respected and restored.

Returning then eagerly to our work, and without altering a line of all that new part which was to be combined with El Stalon, the new project was drawn up and was unanimously approved, in its artistic side, by the Special Committee and almost unanimously by the Communal Council"! The design thus completed affords an excellent example of the adaptation of an old building to modern wants.

Within the first years, then, of this century the new Fish Market took its place among the historic buildings upon the Grand Canal of Venice, and it is so entirely harmonious with these that it seems to belong to them, to come naturally into the picture.

The style selected was, most appropriately, the Byzantine Gothic; and, clearing the old palace of El Stalon of the poorer buildings which had become attached to it in later ages, the architects had connected it by a fine open staircase—"*di antico tipo veneziano*" ("of old Venetian character")—with the new buildings, thus making a group of buildings which, though free to the air, maintained the traditional character of Venetian architecture.

On the ground floor of El Stalon, as restored, they had opened up, by a series of fine arches, a covered arcade which was to be used for retail sale (*al minuto*) of fish in the daily market, reserving the wholesale fish sale (*all' ingrosso*) for the new building. But the upper floor of this new building, looking out on the Canal Grande, is devoted to the Corn Market (Mercato del Grano), and consists of a large room and a very beautiful loggia over the canal, which adds greatly to the effect of the Nuova Pescheria as seen from without. The roof of this loggia is in rafters of wood, and the glass of the windows throughout in old-fashioned small rounds, while at night it is lighted by a great lantern hung from the rafters, which was designed by Professor Laurenti, whose fine ironwork my readers will remember in the Paduan restaurant. Fronting the canal, and beside the wholesale market below, is a little *campielo*, or square, which is quite Venetian in character.

Professor Cesare Laurenti designed also himself all the capitals of the columns supporting the loggia and the fish market below with different fish and sea-birds, introduced as part of the capitals. Thus in the loggia itself we may see lobsters, sea-birds, gulls with fish in their mouths, and other similar subjects; in the central column the faces of fishermen and fishwives have been introduced, and I noted especially the typical head of one old fisherman.

Here, too, is the master's signature, "C. Laurenti," and the date, "1905," of the work's completion; and at the angle of the outer wall of this Pescheria upon the canal, Laurenti, who is also a fine sculptor, set his figure of S. Peter, the fisher of souls—"*Simonem qui vocatur Petrus.*"

The loggia of the Pescheria looks across the Canal Grande to the exquisite Cà d'Oro, and in the distance, looking up the canal, we see the grandly massive forms of the Palazzo Pesaro.

Among these great buildings of the past, typical of two noble schools of architecture, the Italian-Gothic and the Renaissance, the Pescheria, the new Fish Market of Venice—following the architecture of El Stalon, on whose upper floor the Archivio Municipale has a part of its records, and marking the transition of style from the Byzantine to the Gothic—is entirely appropriate. It is a modern building, in which what is best in the spirit of the past—soundness of craftsmanship, sincerity and beauty of design—has been preserved, and thus it forms an harmonious and integral part of beautiful Venice.

BUILDINGS AND DWELLINGS FOR SMALL HOLDINGS.

IN our last issue we gave the first part of an essay by Mr. Thos. P. Bausor, A.R.I.B.A., which was awarded a prize by the Royal Agricultural Society of England, for the Design of House and Buildings for a Small Holding, 1911. The following is the second and concluding part. Last week we also gave a double-page inset illustration in connection with the article.

VIII.—Fold Yards.

In the past, and in the present, much difference has existed as to the desirability of these being open or covered, and the deciding factor on this point must always be local requirements, local weather conditions, or local ideas—the latter more often being hereditary customs.

One is inclined to think that fold yards are frequently viewed as necessary evils, and the evils may be set down as follows:—

(*a*) The undesirability of a man having to pass through a squelching mass of dung and rotting straw on his way from the house to his work amongst the animals.

(*b*) It is equally undesirable for a horse to have no other road to its stable.

(*c*) It is unutterably worse for the same to apply to milch cows.

(*d*) Such a place is certainly not a satisfactory abode for growing stock.

Undeniably the system of arranging buildings round a yard, into which the dung may be thrown and the liquids flow, is the most economical in labour; and if the above shortcomings may be obviated we have every reason for continuing the practice.

The first step is to arrange the cowhouse and stable so that the animals may enter them directly from the outside, and, in addition, to provide a door in each opening directly to the fold yard for throwing dung out.

Direct access must also be given from the food stores, and bedding will be brought in through these latter places or by the outer doors, as may suit best in each individual case.

By these means the cowhouse and stable are, to all intents and purposes, isolated from the more "messy" portions of the homestead.

The growing stock, calves, and pigs are not daily passing in and out of the buildings, and the farmer will rarely pass among them except for feeding.

To produce a fold yard which shall be a comfortable home for stock, it is desirable to pave the floor with concrete, dishing it out well so as to draw the urine to the centre where the partially-made manure is thickest.

If the yard is not roofed in, and so receives rain-water, it is desirable to fix a 9-in. glazedware gulley in the centre, raising the same 4 in. above the level of the floor at that point so as to hold up that depth of liquid—unfortunately a mixture of urine and rain-water—to assist in rotting the manure.

A causeway is usually required round the three sides of the yard occupied by the buildings, for convenient access by the tenant. It should be a step of not less than 6 in. above the general yard, and a width of 3 ft. 6 in., being all that can usually be spared, serves well.

Watering Arrangements.

A water-trough of glazedware, say 6 ft. long and holding 60 gallons, can be conveniently arranged against the fence or wall enclosing the south side. It is best fixed on a solid concrete base, so that its top edge is some 30 in. above the floor line. A hole may be formed through the fence wall, so that the tap can be operated without tramping through the dung. Should a pump be the means of supply, it may be fixed on the outside and yet supply the trough, but a spy-hole, through which the level of the water in the latter may be seen, must not be forgotten.

It is undesirable that water-troughs be fixed in positions lying in lines of traffic, for stock gather round them and cause inconvenience.

Covering.

Here money prevents us covering our yard with plain tiles, pantiles, or slates. The next best covering—two-ply Ruberoid on ¾-in. boards secured to deal purlins, these, in turn, carried by steel trusses—is even outside the region of practical politics to-day.

The once popular method of grooved creosoted boards fixed slightly apart has the grave disadvantage of rendering the rain-water which falls on them unfit for drinking.

Corrugated-iron on light-steel segmental trusses proves very satisfactory, *provided the yard is well ventilated*, and for that purpose the open south front and spaces above the eaves of the buildings suffice. A roof of this type costs approximately 10s. for each square yard of space covered.

IX.—Implement House, Cart Shed, and Poultry House.

Implement House.

Unfortunately it is only on the larger holdings that an enclosed implement house can be indulged in; on smaller holdings the cart shed has to serve.

A paved floor is desirable, but not essential, and a large pair of doors opening on to a roadway completes the points calling for specific mention.

The minimum size may be fixed at 12 ft. square, and, small as this may seem to those used only to large farmsteads, all smallholders will speak of its value.

Cart Shed.

Obviously a northern aspect is most to be desired, for from this quarter come the fewest driving rains and no sunshine. Too much, however, can be made of this point, and in designing these small homesteads it may, if circumstances urge it, be the first ideal to be sacrificed.

Carts are almost continually in use and therefore subject to all weather conditions, and if the shafts are exposed to rain and sun while in the shed little harm will be done; it is obvious that even in extremely narrow sheds the bodies and wheels—*i.e.*, the parts that matter—are protected.

Consideration of the subject will show that with a due south aspect the sun, during the months when its rays are powerfully felt, is so high in the heavens that shadows are cast nearly vertically.

The full width of 18 ft. can rarely be aspired to, and 13 ft. must often be made to serve. Each bay will do well if made 9 ft. wide, the roof being carried by a pole plate of 7-in. by 3-in. red deal running along the front, with a standard of 7-in. by 7-in. oak or creosoted deal to each bay. The feet of these standards are best dowelled to base of stone or cement concrete to prevent them decaying through contact with the earth.

A shed 14 ft. wide in one span will conveniently house two carts side by side.

Poultry Houses.

Once again it may be insisted that portable houses for poultry possess many advantages over other types.

To house birds in the homestead is to encourage them not only to hang about the houseyard, but to wander into the stable, cowhouse, and other buildings, fouling the mangers and fittings generally.

If a poultry house is to be constructed as part of the permanent buildings, it should be on the ground floor; hens do not care to be housed over other buildings, and to place them there encourages promiscuous egg-laying.

Poultry houses should be efficiently lighted and ventilated in the manner proposed for other buildings, and to prevent the easy access of vermin the floor should be concreted, this being kept covered with a liberal layer of dry earth or ashes.

For perches, use 2-in. by 1½-in. deal battens fixed some 1 ft. 6 in apart horizontally on suitable bearers, set at a steep rake against one of the long sides of the building; the main desideratum is that the maximum amount of perch-room shall be provided without preventing easy access to the house for all purposes.

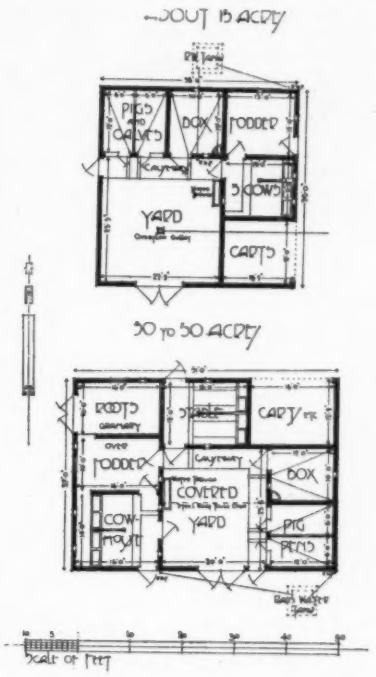
X.—Types of Buildings.

Chief amongst these are those for mixed holdings, then follow dairy, grass, potato, and market-garden holdings, with an infinity of slight variations, principally due to special local conditions, and rendering it impossible to submit suggestions and plans to suit each and every case.

It is important to remember that 50 acres of good land will require as many buildings as 80 acres of fair land.

Mixed Holdings.

From one-third to one-half the area of a "mixed" holding will, as a rule, be under grass, and the smallholder will probably keep a



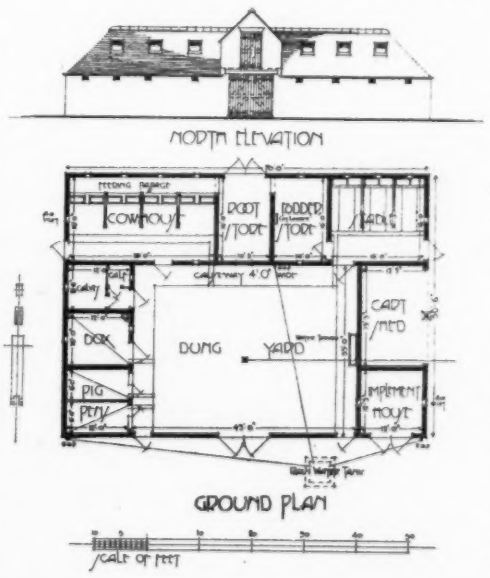
number of cows to produce milk for sale or for butter-making, and, in addition, a number of store cattle to consume his roots and hay and to make manure; generally he will, too, rear his calves.

Reference to the drawing illustrating buildings for a 50 to 80-acre "mixed" holding will show a root house and fodder house, with granary over, sandwiched between a three-stall stable and a cowhouse for six animals.

On a holding of this size the tenant will keep two working horses and a lighter one suitable for use in his trade cart in taking his produce—which includes calves, pigs, eggs, butter, milk, etc.—to market or railway-station.

In districts where the fattening of bullocks is the principal business the cowhouse will provide the fatting stalls; but the smallholder will find it desirable to produce a certain amount of milk for immediate sale wherever possible, for this provides ready cash—a most important matter to a man with limited capital.

The provision of a boiling-house might almost appear an unnecessary luxury, the choice lying between this and a fireplace in the scullery of



the house; further, the accommodation so provided is a necessity, for it is the only place in which swill tubs and meal bins can be lodged. The covered yard will accommodate ten head of young stock.

An unusual departure in such small buildings is the provision of an enclosed implement house, for the smallholder very often possesses valuable implements which need protection. A two-bay cart shed in addition gives by no means excessive house room for dead stock.

The live stock provided for are:—Three horses, six cows, twelve fatting bullocks, four calves, six store pigs—Total, thirty-one.

In the buildings for a holding between 30 and 50 acres the root and fodder houses remain, but for financial reasons the boiling-house is deleted; the stable accommodates two horses, and the cowhouse has two double stalls. Calves will find a home in one of the pig pens or the box, whichever may be most convenient at the time; the covered yard takes four fatting beasts, the implement shed has unfortunately to be omitted and the two-bay cart shed remains as before.

A granary over the root and fodder houses is much to be desired if funds will permit.

The total head of live stock provided for in these buildings is eighteen, viz.:—Two horses, four cows, six fatting beasts, six pigs or calves.

A man who takes a holding of about 15 acres can only expect to derive advantage from it as a supplement to some other occupation.

The accommodation provided is a cowhouse for three animals which could be licensed for the sale of milk, a loose box for a horse or other purpose according to circumstances, and two pens for pigs or calves—total, ten animals—with a fodder house and cart shed.

Dairy Holdings.

Under this heading are included those holdings from which it is the prime endeavour of the farmer to produce the largest possible amount of milk for direct sale or conversion into butter, all other matters being mere make-weights.

The design for buildings for a holding of about 80 acres exemplifies this, as will be seen on inspection.

The cowhouse has six double stalls, and the animals enter directly from the exterior without passing through the dung yard or other buildings; the feeding passage is connected directly with the mixing floor (fodder house) and is provided with a door on the north side of the buildings through which hay may be brought in from the stack yard. Straw for bedding will come in by the door in the east end.

The root store complies with the conditions laid down in an earlier chapter—*i.e.*, three sides are unobstructed so as to form a large bin, and the fodder-house serves stable as well as cowhouse.

Three horses are provided for, two being required for the land and one for the milk-float and trade cart. The calf house is divided by partitions, as previously described in the paragraph under that heading.

There are two pig pens, a loose box, implement house, and cart shed, much as for the "mixed" holding of similar size.

The yard is intended for dung and for exercising the pigs, but the dairy cows should never enter it.

The maximum of live stock provided for is:—Twelve milk cows, three horses, four calves, six store pigs, two various (in the box)—Total, twenty-seven.

The foregoing remarks apply in principle to a holding of about 50 acres also. It will be seen that the cowhouse here is for eight animals, and the root and fodder houses are slightly smaller accordingly.

Three horses are yet required, however, and the remaining accommodation is little altered, as the following statement shows:—Eight cows, three horses, four calves, six pigs, two various (in the box)—Total, twenty-three.

Where less accommodation than for eight cows is required the necessary buildings usually become either those for a "mixed" holding of similar extent, or of a dairyman in an urban district buying and not growing the larger proportion of his feeding-stuffs and bedding.

Grass Holdings.

In some districts, more particularly hilly ones, all the land is under grass, so that the absence of straw for bedding, and afterwards treading into manure, materially affects the nature of the buildings.

Roots also are unavailable as a winter foodstuff; the only variation, in fact, at that period being cake.

The central feature of the homestead becomes a hay barn, as fold yard is omitted, as without straw it would be too cold and uncomfortable for animals to put on flesh in; stalls are substituted of varying widths to suit animals of different ages and sizes.

The accompanying illustration gives an idea of the type of homestead, and shows how the cows, store beasts, and horses are fed directly from the interior and the dung removed directly to the exterior.

The two boxes are for use by sick animals, pigs, calves, other store cattle, or a mare and foal.

A covered dung shed, with a concrete floor well dished towards the centre, is conveniently provided.

In addition to the cart shed shown it may be noted that during the night-time a wagon or cart may be backed into the barn, even though each of the two end bays is full of hay.

The total head of stock provided for is eighteen, viz. :—Two horses, four cows, seven beasts in stalls, five in boxes.

This type of homestead is particularly adapted to exposed situations.

Potato Farms.

In the districts where the production of potatoes is the main endeavour of the farmer certain modifications are necessary. Even on holdings of 80 acres—the possible maximum area of statutory small holdings of the future—more than four milk cows will rarely be kept; three horses are an absolute necessity, and store beasts will be housed in a covered yard.

Special attention is paid to pigs, and a boiling-house is essential; the usual root house is replaced by a large bin for potatoes taken off the boiling-house. The loose box, implement house, and cart shed call for no comment.

Should a granary be desired, it can be very conveniently arranged over the fodder house, gables being formed at the east and west ends over the same, and the roofs of the stable and cowhouse finishing against its north and south sides.

Market-Garden Holdings.

An entirely new departure from all the foregoing types is here required. The main aim being market-garden produce, a somewhat intensive cultivation is entailed; and whilst, as an incidental, every endeavour will be made to make some manure on the holding, much will have to be brought on to it.

Some straw will, of necessity, be grown and some beasts fed; while pigs will be kept to consume the refuse, green stuff, potatoes, etc.

The buildings illustrated are for a 30-acre holding, this being an area particularly suitable for the industry, and on which a man and his family may live. The special feature is the long shed, which serves the three-fold purpose of packing-room, boiling house, and cart shelter.

The home for a few store cattle is a hybrid of a covered yard and tying-up stalls; it is more enclosed, so as to be warmer than a yard, and permits sufficient freedom for treading down the straw without exercising away the beef.

XI.—Dwellings.

There is a great diversity of opinion as to the class of house required by the tenant of a small-holding—more particularly as to whether three bedrooms or four shall be provided, and also as to the provision of a parlour.

Continued intercourse with the people who farm small holdings—and four houses have been recently, or are being, provided—while bringing to light many differences of opinion on minor matters, shows concurring ideas on the points of importance.

It is necessary in considering the matter to bear in mind that it is not rural labourers who are being catered for—this is a different and even wider subject—but tenant farmers possessed of a certain amount of capital, having ideals of independence, and forming a very distinct social class; such are the people who make their living wholly from the larger holdings.

The tenants who hold smaller areas of land do so to supplement their income from other sources, often of a casual nature, and their position is such as to require different housing provision.

It is advantageous, therefore, to view the matter in two divisions—viz., the larger holdings and the smaller holdings.

The Larger Holdings.

The house illustrated last week has been designed to meet the circumstances outlined above, and a very considerable number have been erected with every satisfaction to the occupants.

From an economical point of view the main features are the reduction of external walling and roof-covering to a minimum, and the cost *at the moment* is 4½d. per foot cube, including the paved concrete yard, underground rain-water tank, garden fencing, and drainage complete.

The ideas governing the internal arrangements are as follows :—

A front lobby of just sufficient size to give access to the dwelling from the exterior, to serve for communication between living-room and parlour, and to disconnect the sleeping apartments from the dwelling-rooms.

A parlour of just sufficient size to escape appearing mean, with a floor of boards laid on concrete.

The living-room, which, with its bay-window and floor of red quarries, is comfortable and homelike at all times, is the most important apartment, and as such has the utmost available space allocated to it. A dresser is provided in the fireplace recess.

In the scullery the arrangements are such as to discourage its use for anything but its normal purpose. A washing copper, sink with drainer, and soft-water pump are provided; the floor space is limited to the mark which just avoids cramping.

The open lobby at the back protects the doors of the scullery and dairy from the weather.

The dairy is of ample size in these days of cream separators, and possesses the double advantage of being disconnected from the house (by the last-mentioned open lobby) and yet forming part of it.

The staircase leads to a light, airy landing, which gives some little dignity to the bed-chamber floor, and from it are entered four bedrooms of good shape, one large, two of moderate dimensions, and one smaller. In each will be found convenient places for the bed and other pieces of furniture.

There is also a useful boxroom, which, by reason of a good window, can never become a dark mystery hole.

The coalplace and portable pail closet occupy a detached outbuilding in the paved yard.

The Smaller Holdings.

As previously mentioned, the holdings from which a family cannot derive their livelihood wholly do not warrant the provision of the type of house just described. The parlour and one of the bedrooms must go, and it is frequently desirable that the dwellings should be erected in pairs.

Illustrations of such a pair accompany the first part of this article, and while it is recommended that they should be constructed accordingly, it may be noted that a detached one can be built from the same plans if the roofing is suitably altered.

There is a front lobby, the chief object of which is to disconnect the living and sleeping apartments, a large living-room with dresser, and a store cupboard with window under the stairs. The pantry is entered from the living-room, the scullery has a copper, sink, and draining-board, and the coal store and pail closet are approached through the paved yard.

The staircase is well lighted and the utmost economy exercised in the landing. There are three bedrooms, the largest having a good store cupboard over the stairs.

One underground rain-water tank serves for both houses, but each has a pump over the sink to draw from it.

XII.—Disposal of Drainage.

This is quite a difficult little problem, owing to the tenant refusing to spend time which he cannot well spare in emptying a watertight cesspool.

The discharge to be disposed of comes from the sink waste and the overflow galley of the fold yard.

On rare occasions it is possible to connect to a public sewer, but where this cannot be done the next best course is to form an outfall at a distance of about 50 yds. from the house, and turn the liquid straight over the surface of the land in a series of short shallow trenches.

If the surface of the land is level, or nearly so, the following scheme will be found to act satisfactorily :—Build two tanks, 3 ft. by 3 ft. by 3 ft. deep below the inlet, having sides of 9-in. brickwork, and separated from each other by a 4½-in. wall, the covers to be of cement concrete, that of the first tank having a man-hole cover, and so rendering it airtight, and that of the second an iron grating about 18 in. square. The second tank is filled with large stones.

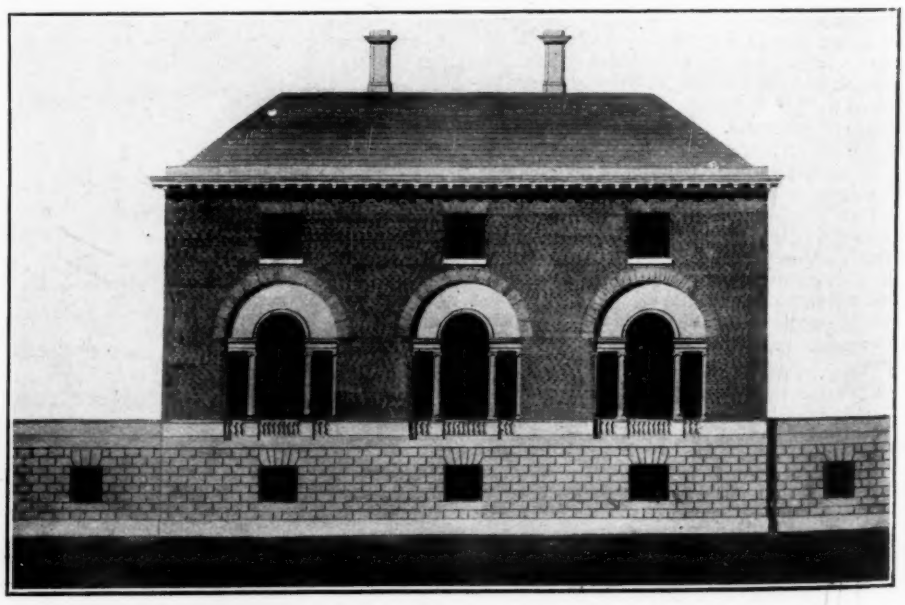
From the first tank to the second form an overflow of glazedware pipes, which shall pass down to within 3 in. of the bottom of the first tank, and on the opposite side of the second tank form a similar overflow. This latter will discharge into a soakaway pit about 3 ft. square filled with gravel or other aggregate which provides considerable interstices.

The action is as follows :—In the first tank all solid matter is intercepted, and the greater portion of it liquefied by anaerobic organisms, such sediment and scum as remains only requiring to be cleared away about twice a year.

Only liquids reach the second tank, where, if not absolutely freed of their septic qualities, they are rendered sufficiently harmless to be discharged into the surface strata at a reasonable distance from even a comparatively shallow well.

SIR MATTHEW FEATHERSTONHAUGH'S HOUSE (DOVER NEW HOUSE), WHITEHALL.

JAMES PAINE built this house for Sir Matthew Featherstonhaugh in the years 1754–58. The front to Whitehall with the Ionic portico and domed hall were designed by Holland. We give an illustration from Sir John Soane's collection of drawings showing the front to the Park as originally designed, which was intended to be carried out in yellow brick and Portland stone. Paine's work is distinguished for its refinement and charm, and, moreover, it is quite distinct from the works of his contemporaries, either Sir Robert Taylor, James Wyatt, or the Adam Brothers.



Sir Matthew Featherstonhaugh's House, Whitehall (Dover House). Front next the Park, as Originally Designed.

James Paine, Architect (1754-58).

THE BUILDING TRADE.

THE MASTER BUILDERS' ASSOCIATION OF NEW SOUTH WALES:

SOME PROBLEMS WE HAVE IN COMMON.

In our last issue some extracts were given from the Annual Report of the Master Builders' Association of New South Wales. The questions which are engaging the attention of builders' associations in Australia are, in essentials, so similar to those which occupy them here that some further reference to the Report may not be without interest.

Some tabulated figures derived from the Water and Sewage Board, showing the number and cost of buildings actually completed during each year, enable one to get an impression of the progress of building for a series of years, from which it appears that the number completed in 1905 was 3,597, of an assessed annual value of £163,486, and that a practically continuous increase has gone on ever since until, in 1914, the number completed was 10,546, of an assessed annual value of £735,588.

The capital cost is also given for the years 1910 and onwards, showing that in that year 4,685 buildings were completed at a cost of £2,569,529, which had grown, in 1914, to 10,546, costing £6,775,548.

As far as one can judge, this represents a healthy and satisfactory growth. It appears that a modern Building Act has become necessary, and unsuccessful attempts were made to get one through the legislature during last year, from which we may infer that modern methods of steel and concrete construction, and the ever-increasing size and complexity of buildings, have outgrown the building regulations there as they have done here.

The shortage of labour complained of in the Report is no new thing in Australia, as is proved by the high rates of wages which have long prevailed there and the strenuous character of their labour disputes and labour legislation, to which attention has often been called. The new feature now, however, is the fact that whereas hitherto these colonies could rely upon an apparently inexhaustible supply of lower-paid labour from, combined with chronic unemployment in, the United Kingdom, now they have to recognise that we, too, are suffering inconvenience from the shortage of skilled labour in nearly every branch of industry, and that wages are rising in consequence. Moreover, the shortage here may continue for a decade or so.

Our Australian cousins will have, therefore, to rear and train their own labour for a long time to come, and the sooner that is appreciated and the problem tackled the better for them. Here, too, we shall have to revise our methods of inducing new blood into the industrial economy.

Hitherto there has been in this country a certain amount of effort by individuals and firms, and occasionally by groups of traders, to train apprentices, but there has not been any general correlated effort to provide a new race of trained men to replace the passing generation.

The play of natural forces has been mainly relied on, but without sufficient appreciation of the trend of those forces; so that the present shortage of labour finds us ill-prepared with new battalions of industrial workers. It is high time that employers faced this question seriously, for it is one they are going to have pressed upon their attention in a manner they will not like.

The provision of industrial recruits, their training and their distribution and officering, is as big and momentous a problem as the improvisation of armies which we see going on around us now. We need an industrial Lord Kitchener, backed by a united Parliament and a united nation, in this matter of maintaining our industrial pre-eminence as certainly as we are finding these things necessary in our present military fight for liberty and right.

The figures given last week, showing the results of State enterprises in the way of carrying out constructional, etc., works by labour directly employed confirm the contention so often urged by builders that work done on those lines costs excessively and competes unfairly with those who, having sunk their own capital in founding a contractor's works, plant, and connection, are bound to earn a profit on their enterprises or go into bankruptcy, whereas State or municipal enterprises of this kind first take the capital required from the community, paying a lower interest than any private person can borrow at, then do not need to earn a living profit, and finally add insult to injury by making a loss and charging it up to the taxpayer. The contractor who sees this kind of thing feels that so long as private enterprise is expected to flourish State enterprise should only be permitted under conditions which will not compete unfairly with the private trader—otherwise the State should do the whole thing and abolish the private trader. The latter would be quite willing to place his services at the disposal of the State if properly paid for them, no doubt; and, if he did, perhaps the results of State enterprise would be less open to criticism, but that is not an issue here as yet.

In Australia they have three methods of settling industrial disputes—viz., arbitration under the Commonwealth Arbitration Act, Wages Boards, and Conciliation Boards. The experience, as its results reach us, is not in favour of the arbitration method; it takes too long, appeals go on from tribunal to tribunal, and even to the Privy Council in England. It thus takes from one to two years to reach a decision. Conciliation methods are relatively quite short, simple, inexpensive, and, above all, efficacious—even more so than Wages Boards. The only reproach made against Conciliation Boards in this country is that the procedure tends to be lengthy, but it is apparent from experience in Australia that it is the most expeditious method as yet available for settling industrial disputes. It has, moreover, the advantage of bringing employers and employed together and cementing good relations, which the other methods fail to do so satisfactorily.

THE LONDON MASTER BUILDERS' ASSOCIATION.

A conference consisting of representatives of various trade societies connected with the building industry took place a few days ago with the members of the Council of the London Master Builders' Association in which a request for an advance of 2d. per hour for all trades to compensate for the serious reduction in real wages consequent upon the greatly-increased cost of commodities since the war was put forward, and after discussion the L.M.B.A. Council arrived at the following resolution:—

"That this Council is unable to advise the members of the Association to agree to any further increase in the rate of wages, but is quite willing to recommend the extending of the ordinary working hours, such extension not to exceed two hours per day first five days of the week until September 30 next."

Under this proposal the employer would only benefit to the extent of being able to make a little more progress. It would not bring him any profit (if he paid any overtime rates it would only increase his loss). The workmen would draw increased wages each week, which would, to a great extent, meet the extra cost of food, etc. Consequently the only contribution of the workman towards the national crisis would be that he should work from five to ten hours extra per week at full pay.

This does not appear to demand any great sacrifice, and would to a great extent solve the problem of the increased cost of living. The offer was refused.

BUSINESS PREMISES, COVENT GARDEN, W.C.

Extensions are being made to the premises of the Bedford Press, Bedfordbury, Covent Garden, W.C. The architect is Mr. J. E. Franck, A.R.I.B.A., Pancras-lane, Queen-street, E.C. The general contractors are Messrs. E. Lawrance & Sons, Ltd., Wharf-road, City-road, N., and the steelwork is by Messrs. Dorman, Long, & Co., Middlesbrough.

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; L.G.B. for Local Government Board; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

Acton.—The U.D.C. have passed a plan for the erection of a factory in Willesden-lane for making telephones, etc., for the Government.

Ardeer.—A loan for the building of 780 houses is being made by the Public Works Loan Commissioners by the Ardeer Garden Village, Ltd.

Ashton-in-Makerfield.—Plans approved by the U.D.C. for extension to works, Downall Gren, and nine cottages at Spindle Hillock, for Mr. Thomas Crompton.

Aylesbury.—Plans passed by U.D.C.:—New engine-room at Messrs. Hills & Partridge's Mill; additions to Messrs. Hazell, Watson, & Viney's power-house; motor shed at 119, Walton-road, for Mr. H. Mayne.

Batley.—Plans have been passed for a warehouse, for Messrs. J. Newsome & Sons, Bradford-road, Batley, the building to be of two stories and 140 ft. long and 75 ft. 6 in. at the widest part; a warehouse, for Messrs. John Fenton & Sons, Bradford-road, 200 ft. by 30 ft.; a villa at Carlton-avenue, Carlton Grange, for Mr. Frank Cope; and two houses in Kirkgate, Hanging Heaton, for Mr. Charles Wormald.

Bedford.—Plans passed:—Warehouse, Duck Mill-lane, Mr. A. Nightingale; ten cottages, St. Paul's-road, for Mr. T. Dickins; alterations to boiler-house, Lurke-street, for Messrs. Fuller & Sons.

Beverley.—Plans passed:—Tanning sheds at Flemingate Tannery, for Messrs. Hodgson & Sons; new cinematograph hall in Butcher-row and Brigham-yard.

Bingley.—Plans passed:—Addition to Bowling Green Mills, Bingley, for Mr. J. H. Beaver; residence off Gawthorpe-lane, Bingley, for Mr. W. R. Atkinson.

Broadstairs.—Plans passed for alterations to No. 1, Church-street, for Messrs. Vye & Sons, submitted by Messrs. Pike & Woolton.

Chesterfield.—Plans passed:—House, Storforth-lane, for Mr. J. Dronfield; two bungalows, Spital-lane, for Mr. A. E. Boulter; two houses, Boythorpe-crescent, Cemetery-drive, for Mr. E. Blacknall and Mrs. E. Gaunt; two shops in Vicar-lane, for Mr. W. Webber; two cottages in Bank-street West, for Mr. Robert Hardwick; two houses in Old Hall-road, for Mr. E. Hattersley; sugar boiling factory in Quarry-lane, for Mr. Samuel Elliott; additions to house in Clarence-road, for Mr. J. H. Gregory.

Coatbridge.—The Dean of Guild Court has granted a lining to the Stobcross Nut, Bolt, and Rivet Company, Ltd., to carry out extensions at their works in Stobcross-street, Coatbridge, consisting of a turning and fitting shop, 150 ft. by 50 ft.; a forging shop, 90 ft. by 90 ft.; and a pattern shop, 50 ft. by 20 ft., at an estimated cost of over £3,000.

Coleraine.—The R.D.C. have completed a scheme for the erection of additional labourers' cottages, for which a loan of £9,636 is being asked.

Coventry.—Mr. J R. J. Meakin has been selected by the Ebas Architect for the Folly-lane School, which is to accommodate 1,200 children. Plans passed by T.C.:—Two houses, Holbrook-lane, for Mr. T. Dagley; two houses, Lythall's-lane, for Mr. F. Fall; two houses, Ransom-road, for Mr. J. Boyce; three houses, Collingwood-road, for Messrs. Davies & Hewlett; two houses, Belvedere-road, for Messrs. S. E. Cox & Co.; eight houses, Wyley-road, for Mr. W. Griffin; three houses, Clay-lane, for Mr. H. J. Emery; two houses, Broadway, for Messrs. S. E. Cox & Co.; eighteen houses, Madeira-road, for Messrs. W. H. Jones & Son; eight houses, Broomfield-place, for Mr. W. Morris; house, Broomfield-place, for Mr. W. Morris; house, Holbrook-lane, for Mr. A. J. Dobie; new offices, etc., Gosford-street, for Messrs. Hotchkiss et Cie; cooling towers, off Aldbourne-road, for the Corporation Electricity Committee; house, Shakespear-street, Upper Stoke, for Mr. C. Davenport; engine testing shop, Daimler-road, for the Daimler Company, Ltd.; two houses, St. Andrew's-road, for Mr. C. F. Woodall; four-story sanitary block, Queen's-road, for Messrs. A. Herbert, Ltd.; addition to factory, Carlton-road, for Mr. William Laird; tool shed, Gordon-street, for Mr. J. W. Mills; house, Beechwood-avenue, for Messrs. Aston & Greenhill; mission-room, Camden-street, for the Rev. L. Rogers; three houses and house with shop, Lowther-street and Heath-road, for Mr. A. Jeffs; engine testing shops, Park-side, for the Siddeley-Deasy Motor

* See also our list of Competitions, Contracts, etc., on page 413.

Company, Ltd.; additions to workshop, Foleshill-road, for Mr. Geo. Wilson.

Croydon.—The E.C. are submitting the enlargement scheme for the Winterbourne-road Schools to the Board of Education.

Douglas.—Plans for a new school have been forwarded to the Board of Education.

Easington.—Plans passed by R.D.C.:—Additions, North-road, Wingate, Mr. Thomas Glass; Wesleyan Church, Easington Colliery, the trustees; two houses, Gale-street, South Hetton, Mrs. Baker; two cottages, Haswell, Mr. R. Spark; four houses, shop, and club premises, Slotton Colliery, Mr. J. McCulloch; and fifteen cottages, Blackhall Colliery, Mr. T. Lawson.

East Ham.—The Board of Education has approved of the plans of the proposed Dersingham-avenue School, and the architect of the E.C. has prepared a drawing of the proposed Altmore-avenue School.

Egremont.—The Cumberland E.C. have instructed the architect to prepare preliminary sketch plans and estimate of the cost of girls' school to accommodate 350 scholars, with special room for instruction in housewifery, to be erected on the site adjacent to Egremont Central Infants' School.

Flaxton.—The R.D.C. have passed plans for four houses in Hurlington-road, for Mr. G. Barton.

Foleshill.—Plans passed by R.D.C.:—House and shop, Lythalle-avenue, Foleshill, for Messrs. Kelley & Sons; house and shop, Little Heath-road, Foleshill, for Mr. E. Pearson. It is reported that considerable industrial development is taking place in the district. New areas of land are being built upon for the purpose of accommodating workers, whilst there is building activity in other directions. A large site has been acquired by Messrs. White & Poppe, Ltd., Lockhurst-lane, who are pushing forward with the erection of an extension of their works. In the same neighbourhood the Coventry Stamping Company, Ltd., have revived activity at existing premises, and it is reported that another engineering firm have acquired land for building also in the Holbrooks-lane locality.

Hadley.—The Shropshire E.C. have purchased a site for a school.

Ifton Heath.—Plans for the erection of a cookery and laundry work centre by the Shropshire E.C. have been approved by the Board of Education.

Ilford.—Sketch plans prepared by the Surveyor for a central library are before the U.D.C.

Irlam.—Plans passed by the U.D.C. for two houses in Henley-avenue, for Mr. H. H. Longworth, and a presbytery in Astley-road, for the Rev. J. W. Thompson.

Kirdford.—Plans for improvements to the school have been prepared.

Louth.—Plans passed by R.D.C.:—Primitive Methodist Chapel at North Thoresby; additions to house at North Thoresby, for Miss Hutchins; and additions to a house at Thoresby Bridge, for Mr. A. J. Hewson.

Macclesfield.—Two houses in Beech-lane, for Messrs. Allen & Booth, and house in Watercotes, for Mr. J. Wilson.

Maesbury.—A site for a school has been purchased by the Shropshire E.C.

Maidstone.—The Surveyor of the R.D.C. is preparing a scheme for sewage disposal for Bearsted.

Meltham.—Plans passed:—Stockroom at Meltham Mills, for Messrs. Jonas Brook & Bros., Ltd.

Newcastle-on-Tyne.—Plans have been approved by the Newcastle Improvement Committee for the erection of a large fireproof warehouse to be built on a site of about 700 sq. yds. in Waterloo-street, Newcastle. The architects are Messrs. Marshall & Tweedy, 17, Eldon-square, Newcastle.

Newport (Isle of Wight).—Plans passed for post-office and shop, for Mrs. Cooper, of Shilde.

Ossett.—Plans passed:—Additions to warehouse, and also a new warehouse, in Spa-street, for Messrs. Bentley Bros.; alterations at mill in Guildford-street, for Mr. E. Hepworth; extensions to carbonising-shed at Paleside Mill, for Mr. F. Firth.

Pontardawe.—The R.D.C. have passed plans for thirty-one houses, for the Clydach Estates Company, Ltd., and for six for Messrs. Morgan Bros.

Portland.—Additions to 135, Fortunes Well, for Messrs. J. Groves & Sons.

Rotherham.—Plans approved:—House in Erskine-road, for Mr. H. James; business premises in FitzWilliam-road, for the Masbrough Equitable Pioneers Society, Ltd.

Shoreham.—The Board of Education have approved of the plans of the West Sussex E.C. for a school clinic.

Slinfold Haven.—The plans of the West Sussex E.C. for the improvement of the school have been approved by the Board of Education.

Stanley.—Plans passed for two houses in King-street, for Mr. E. Dyson, and engine-wright's house at Quaking Houses, for the South Moor Colliery Company, Ltd.

Sunderland.—A Select Committee of the House of Lords has approved the Bill of the Corporation for the reconstruction of the Wearmouth Bridge at a cost of £170,000.

Swansea.—Plans passed:—House in Pentrepoeth-road, for Mr. D. J. Thomas; house in Sidney-street, for Mr. D. John, two houses, Maesteg-street, for Mr. W. R. Davies; four houses and shops in Sway-road for Messrs. Thomas & Jones; three houses, Knoll-avenue, for Mr. L. Davies; and two houses in Bowen-street, for Mr. Jenkins.

Wakefield.—Plans passed:—House, Castle-road, for Mr. J. R. Lister; three houses, Symons-street, for Mr. J. S. Pashley; two houses, Barnsley-road, for Mr. Newell; warehouse, Rective Mills, for Messrs. Harrap Bros.; house, Oakenshaw-road, for Mr. S. Gill; six houses, Milnthorpe Green, for Messrs. Hepworth Bros.; house, Manygates-lane, for Mr. H. Womersley.

Wem.—At a cost of £425 the Shropshire E.C. has purchased a site for a school.

Weston Rhyn.—Approval has been given by the Board of Education to the plans of the Shropshire E.C. for a school to provide accommodation for 300 children.

Worcester.—The T.C. are applying to the L.G.B. for a loan of £1,967 for sewers, etc., in Astwood-road.

THE BOILER-HOUSES OF PUBLIC INSTITUTIONS.

In all large buildings, whether designed for industrial or other purposes, there is a remote, obscure, and sometimes almost inaccessible portion where are carried on those processes of which only the final result in health, comfort, and convenience is generally seen. This inconspicuous but vitally necessary part is the boiler-house. Here the lighting and heating arrangements have their source; here the travel of lifts and hoists is controlled; and here it is that steam, the prime mover, is produced, on which depends the generating of the electric current required for lighting, heating, ventilating, and power purposes.

Its triumphs are not visible as are the external beauties or the decorative effects of impressive architecture. They are, however, felt and experienced, and more than one building has suffered severely in its reputation by reason of some inconvenient or discomforting conditions, the real seat of which is often in the boiler-house equipment.

We believe it is a fact that many architects are often in a position to cover by their complete specification the detailed equipment of this portion of the building, but in the absence of much requisite technical information there is sometimes a temptation to leave this part of the work to someone else to see through. Especially is his the case with that most interesting detail of the modern boiler-house, the mechanical stoker.

The superiority of mechanical stoking over hand-firing has in recent years been very conclusively established. Hand-firing, even with the best men available, is a cumbersome and costly method, and even with high quality coals fails to attain complete and efficient combustion and consequent smokelessness; whereas a mechanical stoker ensures a clear, strong fire and an absolutely smokeless chimney. The making-up and keeping in of the fires necessitates, in the case of hand-firing, frequent opening and shutting of the furnace doors and consequent irregularity in the air supply, while there can be no nicety of discrimination in supplying the fuel only to such parts of the fire as need it. Serious fluctuations in the furnace temperature are thus caused and result in lessening the output of steam and inflicting on the boiler plates the maximum of strain, by expansion and contraction, through sudden inrushes of cold air.

These troubles do not obtain with machine-firing, as the coal is automatically distributed by the mechanical stokers without opening the furnace doors, and distribution of the fuel is made only to such parts of the fire as actually require it. A uniformly high furnace temperature is consequently maintained with a correspondingly increased evaporation, and the boiler-plates, being subject to a minimum of strain, a great saving in wear and tear is effected and the boiler life prolonged.

It may be useful at this point to give a brief description of the apparatus. The two chief types of mechanical stokers are the coking and sprinkling stokers, the relative advantages being largely dependent upon the class of fuel to be burnt. The essential difference between them is, that in coking stokers the combustion of the volatile hydrocarbons contained in the fuel is effected at a different portion of the grate surface from the combustion of the fixed carbon or coke. An independent air supply is sometimes provided for the combustion of each portion of the fuel. In coking stokers the fuel is usually fed on to the front of a moving grate, the volatile portion being expelled and burnt near the front, while the fixed portion is burnt during its carriage towards the back of the fire by the movement of the grate surface. The incombustible portion of the fuel (ash) is dropped into a chamber behind the grate. The movement of the grate surface may be reciprocating or continuous.

Messrs. Edward Bennis & Co., of Little Hulton, Bolton, and Victoria-street, Westminster, are among the manufacturers of various kinds of mechanical stokers which are of interest to all those who are concerned in the erection of large public buildings and institutions.

The difference between the sprinkling and coking stokers is still more clearly indicated by the description given below.

The "Bennis" sprinkler stoker has for its prime object the mending of the fire when, where, and as it is required to be mended. It accomplishes this with closed fire doors, so that high evaporation is equably maintained and damage to the boiler-plates by the admission of sudden gusts of cold air is avoided. The mechanism of the sprinkler stoker consists of the grate, fire-bars, and the shovel arm, or sprinkler, which feeds four different parts of the fire surface alternately. The coal is delivered into a hopper by means of measuring shoots, where so desired, and is uniformly distributed on to the fire, which is at all times clear and bright, the gases being entirely consumed in the furnace where they are generated. The stoker is capable of burning without smoke low-grade small coal, slack, and coke breeze, colliery rubbish, and fuel which it is impossible to hand-fire.

In the "Bennis" chain grate stoker the distinctive feature is the new type of link, which possesses many advantages over the older types. Each individual link is halved in the width at its point of junction with the succeeding link, the two half-widths together making the thickness at this part of the link equal to that of the remaining portion of the link; the upper surface of the grate, therefore, remains continuous across the junction. The link is grooved depth-wise at regular intervals, the grooves serving to regulate the air space. Special points claimed by the makers for this type of stoker are:—(1) Continuous grate surface; (2) equable distribution of the air at such points of the fire as require it; (3) the provision of more air space without the widening of the *actual* air spaces; (4) the abolition of the troublesome dumping bar and the substitution of air seals; (5) such an arrangement of the stoker hoppers that ready access to the tubes is afforded; (6) the satisfactory combustion of fine slack fuels; (7) side air seals which protect the furnace walls.

The "Bennis" coking stoker is constructed to give a very high evaporating boiler duty and greater economical efficiency than previous types, owing to the rapid rate at which the fuel is ignited and coked. Fuel is fed through feed boxes over the fire doors, which are air cooled, on to supplementary coking bars, and thence to the main compressed air furnace bars, each with its independent air supply.

The coking stoker itself consists of a machine supplied with hoppers, into which the fuel is fed. Beneath the hoppers are duplicate feed-boxes with reciprocating feeder rams, which feed the coal into the furnace intermittently. Between the feed boxes is a sight hole, a comparatively large orifice, by looking through which it is easily possible at any time to ascertain the state of the fire.

Among the distinctive features claimed for this stoker are:—(1) The power of rapidly lighting back, which carries with it the power of feeding a much larger amount of fuel on to the furnace and getting it burnt. (2) A higher and more even furnace temperature induced by the scrubbing of the coke by the air blown into the fire through the very fine air spaces of the compressed air furnace bars. (3) Maximum flexibility attained by the power of controlling the air supply to the compressed air furnace bars and the adjustment of the damper of boiler—a combination adequate to control the rate of combustion. (4) Combustion without smoke, grits, or dust, the compressed air furnace cleaning into the ash-pit, which is a closed chamber. (5) Simple and easy manipulation, there being but two adjustments for the fireman to make, one that determines the rate of feed, by turning a nut, and the other that regulates the air-feed, by means of a valve. (6) Low cost of upkeep, the parts being few and the feed motion simple. (7) Ventilated dead-plate bars, which keep the fire at an accurately-calculated distance from the boiler front, thereby obviating any injury to the furnace front by parts becoming red-hot

GENERAL BUILDING NEWS.

SCHOOLS, PINNER.

The provision of additional dormitory buildings, playrooms, etc., in connection with the Commercial Travellers' Schools, Pinner, is in progress, and it is expected that the new buildings, which are close to Pinner Station, will be completed in the course of the next few months. The architect is Mr. Thomas Batterbury, Bank-chambers, High Holborn, W.C. The general contractors are Messrs. Dove Brothers, Ltd., Cloudesley-place, Islington, N.; the sanitary fittings are by Messrs. Twyfords, Ltd., Southampton-row, W.C.; the heating is by Messrs. James Slater & Co., Ltd., Wells-street, W.; the casements are by Messrs. Henry Hope & Sons, Ltd., Berners-street, W.; and the rain-water heads and downpipes are by Messrs. Thomas Elsley, Ltd., Great Titchfield-street, W.

EDINBURGH LADIES' COLLEGE.

The Edinburgh Merchant Company Ladies' College, Queen-street, Edinburgh, is at present being reconstructed. It was decided to pull down the eastern section and to rebuild it, so that when it was completed the pupils could be accommodated there while the western portion was under reconstruction. The former section has now been completed. The new school, which has a façade to Queen-street, has a frontage of 70 ft., and comprises five floors. The second portion of the school will have a frontage of 90 ft., with the main entrance portico and staircase. The whole scheme will provide accommodation for about 900 pupils. The cost of the work now completed is estimated at £23,625. The architect is Mr. Hippolyte J. Blanc, R.S.A.

TRADE NEWS.

We have received from the General Electric Company, Ltd., a small paper folder which has the interior devoted to illustrations and descriptions of German and British aircraft. The chief types are referred to in the letterpress and their distinguishing characteristics mentioned. When folded up, two illustrations are presented to view. One shows a fleet of aircraft dropping bombs and the other a "Freezor" electric fan, providing a refreshing breeze. On opening the folder, prices and particulars of the "Freezor" small pattern electric fan for use on either continuous or alternating current circuits are given. Copies of this folder can be obtained upon application to the General Electric Company, Ltd., Publication Department, 67, Queen Victoria-street, London, E.C.

Owing to the war and the general increase in the cost of materials and labour, Messrs. Humphries, of Osier Ironworks, Point Pleasant, Wandsworth, S.W., have been compelled to advance the price of their bracket scaffolds. In future these will be:—Complete sets, three boards wide, 19s. 6d.; complete sets, five boards wide, 27s. 6d.

Boyle's latest patent "air-pump" ventilator has been applied to St. Barnabas Church, Beckenham, Kent.

On the flat roofs for the factories of a large glass manufacturer at Rotherham, the architect specified a waterproofed concrete as a finishing coat. Messrs. Kerner-Greenwood & Co., the makers of the powder Pudlo, which was used for the work, state that some very important contracts are being roofed with waterproofed concrete. The recently erected Knightwick Sanatorium has also been treated with the powder Pudlo.

The new Smallpox Hospital, Ipswich, is being supplied with Shorland's warm-air ventilating patent Manchester stoves by Messrs. E. H. Shorland & Brother, Ltd., of Failsworth, Manchester.

WAGES IN THE BUILDING TRADE.

Blackburn.—On and after May 1 an advance in wages of ½d. per hour (9½d. to 10d.) will be paid to the plasterers in this district.

Midland Counties.—At the quarterly meeting of the Executive Council of the Midland Centre of the National Federation of Building Trades Employers it was reported that applications had been made to several local Master Builders' Associations for advances in wages to cover the increased cost of living. The Council passed the following resolution:—"That pending any action by the National Federation, no advance in wages or war bonus be considered by any local association unless a notice in accordance with the rules has been given."

Newport, Mon.—The following increases in wages will be paid in this district as from May 1:—Stonemasons, bricklayers, carpenters and joiners, plasterers, plumbers, ½d. per hour (9½d. to 10d.); labourers, ½d. per hour (6½d. to 7d.).

Northern Counties.—At a special meeting of the Northern Counties Federation of Building Trade Employers the following resolution was unanimously adopted:—"That in view of the unanimous expression of opinion from the representatives of the Northern Counties area and the country generally against any advance of wage or war bonus in the building trade under present circumstances, this meeting is of opinion that there is no justification for any advance whatever, and that local associations be instructed accordingly and this resolution be conveyed to the men."

Portsmouth.—The various trades in this town have asked the Master Builders' Association for an advance in wages to help meet the exceptional circumstances due to the war.

Preston.—Advances in wages of ½d. per hour will be paid to the plasterers and plasterers' labourers in this district as from May 1. On and after that date the rate for plasterers will be 9½d. per hour and for plasterers' labourers 6½d. per hour.

Scarborough.—The following increases in wages will be paid in this district as from May 1:—Carpenters and joiners, ½d. per hour (8½d. to 9d.); bricklayers, ½d. per hour (9d. to 9½d.).

York.—An advance in wages of ½d. per hour (6½d. to 7d.) will be paid to the labourers in this district as from May 1.

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the Building Trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur:—

——	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons' Labourers.	Bricklayers' Labourers.	Plasterers' Labourers.
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Aberdare	9	—	9½	9½	—	9	8	6½	6½	6½
Accrington	10	9½	9½	9½	9	9	9½	6½	6½	6½
Altrincham	9½	10	10½	10	8½	10	9	6½	6½	6½
Ashton-under-Lyne	10½	10½	10	10½	9	10	9	6	6	7
Barnsley	9½	9½	9½	9½	9	9	8½	7	7	7
Barrow-in-Furness..	9½	10	9½	9½	9½	9½	9½	7	7	7
Barry	9½	9½	9½	10	—	9	8½	6½	6½	6½
Bath	8½	8½	8½	8	7½	8	7½	5½	5½	5½
Bedford	8	8	8	8½	8	9	6½	5	5	5½
Birkenhead	11	11	11	11½	11	11	9½	7	7	7
Birmingham	11	11	11	10½	9½	10½	9½	8	8	8
Bishop Auckland..	9	9	9	9	10	9	7½	6	6	6½
Blackburn	10	10½	10	10	9½	10	9½	6½	7	7
Blackpool	10½	9½	9½	9½	8½	9	8½	6	6	6
Bolton	10	10½	10	10½	10	10	9½	6–7	6–7	6–7
Bournemouth	8½	8½	8½	8½	8½	8½	8	6	6	6
Bradford	10	10	9	9½	9½	10	8½	7	7	7
Bridgwater	6½	6½	6½	6½	6½	6½	6	4	4	4
Brighton	9	8½	8½	8½	—	8	7	6	6	6
Bristol	10½	10½	10½	10½	—	10½	9½	7½	7½	7½
Burnley	10	9½	9½	9½	8	9	9½	7	7	7
Burton-on-Trent	9	9	9	9	8½	9	8½	6½	6½	6½
Bury	10½	10½	10	9	9½	10	9	6	6	6
Cambridge	9½	9	9	9½	9½	9½	7½	6	6	6
Canterbury	8½	8	8	10	—	8½–9	6½	5	5	5
Cardiff	9½	9½	9½	9½	9½	9½	8½	7	7	7
Chatham	8	9	9	9	9	9	7½	6	6	6
Chelmsford	8	7½	8½	9	—	7½	6½	5	5	6½
Cheltenham	8½	8½	8½	8½	—	8½	8	6	6	6
Chester	9½	10	9½	9½	9½	9½	8½	5½	6½–6½	5–5½
Chesterfield	9	9	9	8	9	8½	8½	5½	5½	5½
Colchester	8	8½	8½	9	8	9	6	5½	5½	5½
Coventry	10½	10½	10½	10½	9½	10½	8½	7½	7½	7½
Crewe	7	8	7½	9	8	8	7½	5	5½	6
Darlington	9½	9½	9½	10	10	9	8½	6½	6½	6½
Derby	9½	9½	9	9	9	9	8	6½	6½	7
Doncaster	9½	9½	9	9	9	9	8	6½	6½	7
Dudley	8½	8½	8½	8½	8½	8	7½	5½	5½	5½
Durham	9	9	9½	9	10	9	8½	6	6	6½
East Glamorgan and Monmouthshire Valleys	9½	9½	9½	9½	—	—	8½	6½	6½	6½
Exeter	8	8½	8	8½	7½	7½	7	5½	5½	5½
Folkestone	8½	8½	8½	9	8½	8½	7–7½	6½	6½	6½
Gloucester	8	8½	8½	8	8	8½	8	6	6	6
Grantham	8	8	7½	7½–8	7½–8	7	6½	5	5	5
Grays	—	10	10	—	—	9½	8½	7	7	7
Grimsby	9	9	9	9	9	8	8½	7	7	7
Great Yarmouth	8	8	8	—	8	8	6½	5	5	—
Halifax	10	10	9	8½	8½	9	8½	7	7	7
Harrogate	9½	9½	9	9	8	9	8½	6½	6½	6½
Hartlepools	9	10	9½	10	10	10	9	7	7	7½
Hastings	8½	8	8	8½	8	8	7	6½	5½	6½
Hereford	8	8	7½	8½	8	7	6½	5½	5½	5½
Huddersfield	10	9½	9½	9½	10	9	8½	7	7	7
Hull	10½	10	10	10	10	10	8½	7½	7½	7½
Ipswich	8½	8½	8½	9	9	8½	7	5½	5½	5½
Lancaster	10	10	9	9	9	9	9	5½	6	6
Leamington Spa	9	9	9	8½	9	9	8	6	6	6
Leeds	10	10	10	10	9	10	8½	7½	7½	7½
Leicester	9½	9½	10	10½	9½	9½	9	7	7	7½
Lincoln	9	8½	8½	9	8	8½	8	6	5½	6
Liverpool	11	11	11	11	10½	11	9½	7	7	7
Llanelly	9½	9½	9½	8½	9	8½	8	5½	5½	5½
London	11½	11½	11½	11½	—	1s.	9	8	8	8
Loughborough	9	8½	8½	9	9	8½	7½	5½	5½	5½
Luton	9½	8½	8½	8½	9	8½	7½	5½	5½	5½
Maidstone	9	9	9	9	9	9	8	6	6	6
Manchester	10	10½	10½	11	10	10	9½	6½	6½	7½
Mansfield	8½	9	8½	8½	—	8½	8	6	6	—
Merthyr Tydfil	9½	9½	9½	9½	8½	9	8	6½	6½	6½
Middlesbrough	9	10	9½	10	10	10	8½	7	7	7½
Newcastle-on-Tyne.	10½	10½	10½	10½	10	10	9	7½	7½	7½
Newport, Mon.	10	10	10	10	8½	10	8½	7	7	7
Northampton	9	9	9	9	8½	9	8	6	6	6
Norwich	8	8½	8½	8½	8	8½	7	5½	5½	5½
Nottingham	10	10	10	10½	9½	10	9	7½	7½	8
Oldham	10½	10½	10½	10	9	10	9½	7	7	7½
Oxford	9½	9	9	9	8	9	8	6½	6½	6½
Plymouth	9	9	9	9	9	9	8	6½	6½	6½
Pontypridd	9½	9	9	9½	9	9	8	6½	6½	6½
Portsmouth	9½	9½	9½	9½	—	8½	7½	7	7	7
Preston	10½	10½	10	9½	9½	10	9½	5½	6	6½
Reading	8½	9	9	9½	—	9	7½	6	6	6
Rochdale	10	10½	10	10	8½	9½	9	7	7	7½
Rochester	8	9	9	9	9	8½	7½	6	6	6
Rugby	9½	9½	9½	9½	8	9½	8½	6	6	6
St. Albans	9	9	9	9–10	9	9–10	8	6½	6	6½
St. Helens	9	9½	10	9½	9½	9½	9½	6	6	6
Scarborough	9	9½	8½	8½	8	9	8	7	7	7
Sheffield	10½	9½	9½	9½	9½	9½	8½	6½	6½	6½
Shrewsbury	8½	8½	8½	9½	—	8½	7	5½	5½	5½
Southampton	8½	9½	9½	8½	—	9½	8½	6½	6½	6½
Southend-on-Sea	9	9	9	9	P'cework	9	7	6	6	6
Southport	10	10	9½	9½	9½	9½	9½	6½	6½	6½
South Shields	10½	10½	10½	10½	10	8½	9	7½	7½	7½
Stockport	10½	10	10	10½	9	10	8½	6	6½–7	7½
Stockton-on-Tees	9	10	9½	10	10	10	9	7	7	7½
Stoke-on-Trent	9	9½	9	9	—	8½	8½	6	6	—
Stroud	7½	7½	7½	7½	7½	7½	7	5	5	5
Sunderland	10	10½	10	10	10	9	9	6½	6½	7
Swansea	9½	9½	9½	9½	8½	9	9	6½	6½	6½
Taunton	7	7	7	7	—	6	6½	4½	4½	4½
Torquay	8	8	8	8	8	8	8	6	6	6
Wakefield	9½	9½	9	9½	8½	9	8	7	7	7
Walsall	9½	9	9	9	8½	9	8	6½	6½	6½
Warrington	8½	9½	9½	10	8½	9½	8½	5½–6	6	6–6½
West Bromwich	10	10	9½	9½	—	9	8	7	7	7
Wigan	10	10½	9½	9½	9	9½	9½	7	7	7
Windsor	9	9	9	10	—	9	—	6	6	6½
Wolverhampton	9½	9½	9½	10	8	10	8	6½	6½	6½
Worcester	8½	9	9	9	8½	9	7½	6	6	6
York	9½	9½	9	9½	9½	8½	8½	7	7	7

The masons' rate given is for bankers; fixers usually ½d. per hour extra.

LAW REPORTS.

KING'S BENCH DIVISION: DIVISIONAL COURT.
(Before Justices BAILHACHE and SHEARMAN.)

The Responsibility of Frontagers to the Public: Horridge *v.* Makinson.

THIS case was heard last week upon the plaintiff's appeal from a decision of the County Court Judge sitting at Wigan.

The plaintiff brought the action to recover damages from the defendant for personal injuries sustained by her through being tripped up on the pavement outside the defendant's house. The facts were these:—Defendant owned and occupied a house in Hindley. Some ten or eleven years ago the local authority decided to raise the level of the pavement outside her house under the powers vested in the authority by the Private Street Works Act, 1892. In the course of the execution of the work it was found that against the wall of the defendant's house there was a coal-shoot, which was on the level of the then pavement, and in order not to exclude access to it one or two flagstones were left out. In 1914 the plaintiff, while passing along the pavement, tripped in the hole so left. The learned County Court Judge non-suited the plaintiff, and from that decision the plaintiff now appealed.

Mr. Langdon, K.C., in support of the appeal, contended that the hole was undoubtedly a nuisance in the highway, and that the defendant, having permitted it, was liable, and that the appeal ought to be allowed.

Mr. Gilbert Jordon, for the defendant, contended that, as the nuisance existed in the highway itself, the defendant was not liable, and that the County Court Judge was right in non-suiting the plaintiff.

Mr. Justice Bailhache, in the course of his judgment, after stating the facts, said the law as laid down in the decided cases appeared to be that if the occupier of land which adjoined a highway allowed his land to become a nuisance he was responsible for any harm that happened to a person using the highway, even although he had not created the nuisance, provided that he knew of it and did not remedy it. But there was no duty on a frontager to keep in repair a highway which had been taken over by the local authority. Not only was there no duty, there was no power in the frontager to do any repair to the highway. The distinction, therefore, was between a nuisance in the highway itself and one on land adjoining a highway. In the present case the nuisance was in the highway, and therefore, in his Lordship's opinion, the County Court Judge was right in non-suiting the plaintiff. He thought, therefore, that the appeal failed and should be dismissed with costs.

Mr. Justice Shearman concurred, and the appeal was accordingly dismissed with costs.

No Compensation Awarded for Accident in a Saw-mill.

AT the Coventry County Court on Wednesday, the 14th inst., before his Honour Judge Cann, a claim for an award under the Workmen's Compensation Act was made on behalf of Arthur Edward Rowe, son of John Rowe, labourer, Keresley Heath, near Coventry, against Messrs. Kelley & Son, builders and contractors, Foleshill, Coventry, because of the severance of his right arm just below the elbow by a circular saw whilst working in Messrs. Kelley's saw-mill. Mr. Roland Hollick (Coventry) was for the applicant, and Mr. Sandlands (instructed by Mr. T. Hayes Duffell) appeared for the respondents. Liability was denied.

Giving evidence, the applicant, Arthur Edward Rowe, stated that he was eighteen years of age. He entered the employ of the respondents about December, and his wages were 16s. weekly. His duties were to help in carrying timber about the mill and sweep the mill up. He was with the sawyer most of the time. Witness helped the sawyer to pull the timber on the saw before it was sawn. Towards the end of January the electric light used to go out at five o'clock. There was a gas-jet over each saw in the mill, and about the time the electric light went out the gas was lit. On January 29, the day of the accident, witness saw Gibbins, the sawyer, standing at the end of the saw and waiting for the gas to be lit. That was at about five o'clock. Gibbins said to him, "Have you got a match?" Witness said, "Yes." Gibbins then said, "Light the gas for me." Gibbins turned on the gas, and witness struck a match to light it. The gas-jet was a little too high for witness to reach it. He dropped the match, which was then alight, and it fell on some sawdust on the bench. Witness thought that the lighted match would set fire to the workshop, and he put his hand between the saw and the guard to pick up the match. He could not have picked up the match by reaching over the guard. The saw caught his sleeve and took his right arm off. The accident was witnessed by Gibbins and the chief machinist, who was standing close by. Witness was taken to the hospital. He had received no wages since, and he was still unable to work.

Mr. Hollick: Were you ever told by anybody not to go near the saw?

Applicant: No.

Had you ever been told not to light the gas?—No.

Are you quite certain that the sawyer asked you for a match?—Yes.

William Edward Gibbins said he was employed by respondents as a circular sawyer. Applicant was a willing lad, and had casually given help in moving timber. Just before five o'clock on the afternoon in question, witness untied the string holding the two gas-brackets together. He had one hand on the tap of the gas-bracket and the other hand in his pocket to get a match. Rowe came some five or six yards with a match already lighted. The match fell over on the right-hand side of the saw. The match was then alight, and Rowe tried to save it. He put his hand between the guard and the saw, and the next thing that witness noticed was that the poor boy's hand was gone. The match was alight when it was dropped. There was a little sawdust on the bench, and the match dropped on to the sawdust.

Mr. Hollick: The boy says you asked him for a match?

Witness: I never spoke to the boy, either before or after.

Did you try and stop him from lighting the gas?—No; I had no chance whatever.

Cross-examined: It was witness's duty to light the gas. There was no danger of fire from a match and a little sawdust. Had there been any such danger, witness and others would have looked after that.

Arthur Wimlet, the chief machinist employed at the respondents, and Albert Atkins, the foreman, both gave evidence to the effect that it was no part of the applicant's duties to interfere with the gas.

After hearing considerable legal argument, his Honour, while expressing the greatest sympathy with the applicant, said that he could not give him any relief in these proceedings unless he was satisfied that the accident arose out of and in the course of his employment. He did not think it was necessary for the boy to have provided a light for his own work, because the witness Gibbins went to do it. He (the Judge) had come to the conclusion that there was no request to applicant to do it, and there was no necessity for him to do it, and that it was not, under the circumstances, a reasonable extension of his duties. The result was that he (the Judge), with some regret, felt bound to find that the accident did not arise out of and in the course of his employment.

Judgment was accordingly given for the respondents. The Judge subsequently added that, although there was no legal liability on the part of the respondents, he thought it was a case in which they might see their way to give some assistance to the applicant.

There was no application for costs.

THE COURT OF COMMON COUNCIL.

A MEETING of the Court of Common Council was held on April 22 at the Guildhall, when the following amongst other matters were dealt with:—

Epping Forest Conservation.—Mr. Deputy Ellis asked whether the attention of the Epping Forest Committee had been directed to proposals of the London Traffic Branch of the Board of Trade with respect to new arterial roads in North-East London, and what steps had been taken to safeguard the interests of the Corporation as conservators of Epping Forest.

Mr. Harry Bird replied that the Epping Forest Committee were deeply concerned in regard to the proposals. He felt that, although the Corporation had appointed two representatives to the Conference of the Board of Trade on the subject, the Epping Forest Committte were placed at a disadvantage in having no direct representation. Several proposals were before the Conference which would seriously interfere with the great domain of the forest.

It was resolved to nominate the Chairman of the Committee, Mr. Bird, as a member of the Conference, and send his name to the President of the Board of Trade with a request that he should be allowed to sit.

The Westminster Hall Statues.—The Court agreed to allow the City Lands Committee of the Corporation to take such steps as they may consider desirable with regard to the statues of Kings from Westminster Hall. Certain of the statues are being placed in the Central Criminal Court.

The Mansion House.—Sanction was given for carrying out works of redecorations and repairs at the Mansion House at an estimated cost of £5,745.

NEW COMPANIES.

THE undermentioned particulars of new companies recently registered are taken from the Daily Register compiled by Messrs. Jordan & Sons, Ltd., Company Registration Agents, Chancery-lane, W.C.:—

J. C. STEPHENS & SON, LTD. (139,927). Registered April 12. To acquire business of ladder-makers, wheelwrights, scaffold pole and timber merchants, builders' merchants, builders, decorators, etc., carried on by J. C. Stephens & Sons at 884A, Old Kent-road, S.E. Nominal capital, £1,000 in £1 shares.

F. MOEHL, LTD. (139,949). Registered April 14. To enter into an agreement and to carry on business of contractors, builders, and manufacturers of reinforced concrete, etc. Nominal capital, £2,000 in £1 shares.

G. WEEKS & SONS, LTD. (139,925), 61, High-street, Bromley, Kent. Registered April 12. To acquire business carried on at the above address, also business carried on at 5, High-street, Beckenham, Kent, as G. Weeks & Sons, as builders' merchants, builders' ironmongers, tool merchants, cutlers, engineers, etc. Nominal capital, £12,000 in 5,000 £1 Preference shares and 7,000 £1 Ordinary shares.

JOHN KIRKHAM, LTD. (139,983), 11 and 13, Breck-street, Poulton-le-Fylde. Registered April 16. To acquire business of a plumber, painter, and decorator, and heating, sanitary, and lighting engineer, now carried on by John Kirkham at 11 and 13, Breck-street, Poulton-le-Fylde, under style of John Kirkham, and to enter into an agreement. Nominal capital, £100 in £1 shares.

PATENTS.

APPLICATIONS PUBLISHED.*

5,441 of 1914.—Harry John Burgess: Apparatus for closing doors and gates.

6,323 of 1914.—James McHardy and Rudolph Hermann McHardy: Fanlight openers and the like.

7,452 of 1914.—Johannes Harden: Manufacture of hollow steel bars.

8,641 of 1914.—William Newman: Window-fitting for raising or lowering furniture, safes, and the like.

8,926 of 1914.—John Joseph Muller: Sliding window-sashes and frames.

9,180 of 1914.—Samuel Richard Wheeler and Samuel Wheeler, Ltd.: Panels for building walls of ovens, drying stoves, fuel economisers, water, air, or gas heaters, and the like.

9,695 of 1914.—Morland Micholl Dessau: Paving of roadways and the like.

11,665 of 1914.—Francis Herbert Porter: Suspending and drawing means for curtains and the like.

16,959 of 1914.—Henry Schrimgeour Valentine: Kitchen ranges.

19,802 of 1914.—Robert C. Spencer, jun.: Casement window adjusters.

20,866 of 1914.—Don Augustus McCoy: Fire-escapes.

20,911 of 1914.—James Breakenbridge Smith: Automatic fire and temperature alarms.

21,263 of 1914.—Peder Andersen Fisker: Machine for cleaning, grinding, finishing, and polishing of parquet floors and similar surfaces.

23,768 of 1914.—James Ellis Barraclough: Saddle or protection plates of domestic or like ovens.

24,527 of 1914.—George Carey Sykes: Means for securing shelves in position.

NEW SANATORIUM, COATHILL.

A new tuberculosis sanatorium and dispensary at Coathill erected for the burgh of Coatbridge has recently been opened. The hospital pavilion has accommodation for twenty-eight patients, and consists of two large wards with dining-room at the end of each ward. Rooms are also provided for cases requiring special treatment. Lavatory and bathroom accommodation is provided. A verandah occupies almost the entire frontage of the pavilion, the verandah roof being glazed. Connected with the main building by means of a covered way is the administrative block. The buildings were designed and erected by Messrs. Wm. Bain & Co., Ltd., Lochrin Ironworks, Coatbridge.

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

List of Competitions, Contracts, etc.

For some contracts still open, but not included in this List, see previous issues. **Those with an asterisk (*) are advertised in this number:** Competitions, — ; Contracts, iv., vi., viii. ; Public Appointments, xviii ; Auction Sales, xx. Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

*** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.

Competitions.

No Date. — **Cheshire.** — Cottages. — Messrs. Lever Bros. invite designs for cottages on the Bromborough Estate. Nine premiums are offered. See advertisement in issue of March 19.

No Date.—**Stepney.**—Municipal Buildings.—The Stepney B.C. invite designs for the proposed municipal buildings. Conditions may be obtained from Mr. G. W. Clarke, Town Clerk, Municipal Offices, 15, Gt. Alie-street, Whitechapel, E.

No Date. — **Whitehaven.** — Hospital. — The Galemire Joint Hospital Committee invite competitive designs from architects for a small hospital proposed to be erected in their district. Particulars of Mr. E. B. Croasdell, Clerk, Union Hall, Whitehaven.

Contracts.

BUILDING AND PAINTING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

May 3. — **Earby.** — Plastering. — For the plasterer's work in connection with police-station and constables' houses at Earby, near Skipton. Quantities of the West Riding Architect, County Hall, Wakefield.

May 3.—**Newark.**—House.—Erection of house at Kelham, near Newark. Quantities, etc., of Messrs. Sheppard & Lockton, architects, Bargate, Newark. Deposit, £1 1s.

May 3.—**Warrington.**—Painting.—For painting several Corporation properties (outside). Specifications, etc., of the Borough Surveyor, Town Hall.

May 4.—**Carlisle.**—Demolition, etc.—Pulling down and clearing of the site of certain property, and also for the demolition of property belonging to the Corporation, situate in Twenty-man's-court, Finkle-street, and for certain constructional works in connection therewith. Specifications of Mr. Henry C. Marks, City Engineer, 36, Fisher-street, Carlisle.

May 4.—**Darlington.**—Painting.—Painting the outside of the Education Offices, North Lodge Park. Quantities of Mr. George Winter, Borough Surveyor, Town Hall.

May 4.—**Exeter.**—Painting.—Painting, etc., at 46 and 47, Southernhay West, Nos. 1 to 11, Higher Summerlands, and at the Exeter City Workhouse for the B.G. Specifications of Mr. R. M. Challice, architect, 7, Bedford-circus, Exeter.

May 6.—**Sandbach.**—Chapel, etc.—Erection of Primitive Methodist Chapel and school at Malkins Bank, near Sandbach. Specifications of Messrs. Alfred Price & Sons, architects, Sandbach.

May 7. — **Huddersfield.**—Extension.—Extension of the filter house at Longwood Reservoirs for the Corporation. Quantities of the Waterworks Engineer, Town Hall, Huddersfield.

May 8.—**Kirkcaldy.**—Slating.—Reslating of roof of workshop at car sheds for the T.C. Quantities of the Burgh Surveyor.

May 8.—**Pilton.**—House.—Erection of dwelling-house for the trustees of Pilton United Charities. Specification of Mr. J. C. Southcombe, architect, Bridge-buildings, Barnstaple.

May 8. — **Whitby.** — Lifeboat House, etc.—Construction of a timber-framed lifeboat house covered with corrugated steel sheeting, a reinforced concrete substructure, slipway, and approach, at Whitby Harbour, for the Royal National Lifeboat Institution. Quantities of the engineers and architects, Messrs. Douglass, Lewis, and Douglass, 15, Victoria-street, Westminster, London, S.W. Deposit, £1.

May 10. — **Darton.** — Walls, etc.—Building of boundary walls and other works in connection with the enlargement of Gawber Churchyard for the Darton U.D.C. Quantities, etc., of Mr. S. Wilkinson, Surveyor, Council Offices, Darton.

May 10.—**Halifax.**—Machine Works, etc.—Erection of machine works and offices at Mile Cross, Halifax. Names to Messrs. Chas. F. L. Horsfall & Son, architects, Lord-street-chambers, Halifax.

May 10. — **Halifax.**—Painting.—Painting of sundry schools for the E.C. Specifications of Mr. James Lord, Borough Engineer, Town Hall, Halifax. Deposit, £1.

* May 10. — **Tonbridge.**—School.—The Kent E.C. invite tenders for erection of a new school.

May 10.—**Windsor.**—Alterations.—For alterations to lavatory accommodation at the Workhouse for the B.G. Specification at the Workhouse.

May 11.—**Ramsgate.**—Painting.—For works of redecoration at No. 1 scarlet fever block of the Isolation Hospital for the Isle of Thanet Joint Hospital Board. Specification of Mr. H. Bertram Langham, architect, Bank-chambers, Broadstairs.

May 12.—**Ebbw Vale.**—Cottages.—Erection of forty cottages on the Beaufort Estate, Ebbw Vale, for the Fitzroy-avenue Building Club, and for the construction of roads and sewers. Specification of Messrs. Vaughan-Richards & Williams, architects, Imperial-chambers, Ebbw Vale. Deposit, £2 2s.

May 13. — **Glasgow.** — Sanatorium.—For the following works required in connection with the proposed erection of sanatorium and children's home at Southfield, near Mearns, for the Corporation, viz.:—(1) Mason, brick, and concrete works; (2) steel work; (3) slater and rough cast works; (4) plumber work; (5) plaster work; (6) asphalt work; and (7) tile work. Specifications at the Office of Public Works, 64, Cochrane-street.

* May 13. — **Southwark.** — Taking Down Cornice. — The Southwark Guardians invite tenders for taking down cornice and other work.

* No Date.—**Chipping Campden.**—Additions and Alterations. — Tenders are invited for additions and alterations to house.

* No Date.—**London.**—Rebuilding Wall, etc. —Tenders are invited for rebuilding flank wall and reconstruction of interior of corner premises.

No Date.—**Silloth.**—Painting.—For painting, internally and externally, the whole of the Silloth Convalescent Institution. Particulars of Mr. C. W. Allan Hodgson, The Courts, Carlisle.

No Date.—**Sturminster Marshall.**—Alterations.—Alterations and additions to house at Sturminster Marshall for Captain T. C. Birch. Particulars of the architect, Mr. George J. Langer, Walsford, Wimborne.

FURNITURE, MATERIALS, etc.

May 3.—**Romford.**—Road Material.—Supply to the U.D.C. of 1,200 tons of granite, broken to 1½-in. cube, and 800 tons of granite chippings. Forms of tender of the Surveyor, Council Offices, Market-place, Romford.

* May 6. — **Clapham-road.** — Sliding Doors, etc.—The Metropolitan Borough of Lambeth invite tenders for covering in with corrugated iron sheets and provision and erection of sliding doors to sides and ends of a shed.

May 8.—**East Ashford.**—Tar.—Supply to the R.D.C. of East Ashford of 300 (40-gallon) barrels of tar. Mr. Julius Kingsford, Clerk, 7, Bank-street, Ashford.

May 8.—**Edinburgh.**—Materials.—Supply to the Mid-Lothian C.C. Roads Department of tools, general ironmongery, brushes, oils, paints, bricks, pipes, cement, and fencing materials. Quantities, etc., at the Road Office, County Buildings, Edinburgh.

May 10. — **London.** — Smothering Cloths.—Supply to H.M. Commissioners of Works and Public Buildings of asbestos smothering cloths during a period of one year. Forms of tender of the Controller of Supplies, H.M. Office of Works, 18, Queen Anne's-gate, Westminster, S.W.

May 17.—**Hull.**—Materials.—Supply to the Corporation of lead, glass, and plumbers' goods during the remainder of 1915. Forms of tender of Mr. F. W. Bricknell, City Engineer, Guildhall, Hull.

June 1. — **Johannesburg.**—Paint.—Supply of certain paints to the Johannesburg Municipality. Copy of specification at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, E.C.

No Date.—**Dublin.**—Timber.—Supply to the directors of the Great Southern and Western Railway of Scotch fir and black spruce sleepers, 8 ft. 11 in. by 10 in. by 5 in., and a few 8 ft. 11 in. by 9 in. by 4½ in., also of logs to cut 10 in. by 5 in. sleepers. Particulars of the Company's Storekeeper, General Stores, Inchicore, Dublin.

ENGINEERING, IRON, AND STEEL.

May 4.—**India.**—Dog Spikes.—Supply to the Bombay, Baroda, and Central India Railway of dog spikes. Forms of tender of Mr. C. Crommelin, secretary, 110, Bishopsgate, London, E.C. Charge, £1.

May 5.—**Bristol.**—Oil Engines.—Supply to the Docks Committee of two 120-h.p. crude oil engines, each connected direct to a 24-in. centrifugal pump. Specification of Mr. T. A. Peace, Engineer's Office, Cumberland-road, Bristol. Deposit, £2.

May 5.—**Richmond.**—Pipes.—Supply to the Corporation of about 100 tons of heavy cast-iron pipes and special castings, 12 in. in diameter, with spigot and socket joints. Specification of Mr. J. H. Brierley, Borough Surveyor, Town Hall, Richmond, Surrey.

May 6.—**Mallow.**—Retorts.—Renewal of a bed of sewer retorts at the Gasworks of the U.D.C. Particulars of the Manager at the Gasworks.

May 10.—**Hull.**—Bridge.—Erection of a steel footbridge at Hessle-road Crossing, Hull, for the North Eastern Railway Company. Quantities of Mr. C. F. Bengough, Company's Engineer, York.

May 10.—**Spain.**—Dock.—Construction of dock at port of Torrevieja in the Province of Alicante. Copy of "Gaceta de Madrid" containing particulars may be consulted at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, E.C.

May 12.—**Camberwell.**—Steriliser.—Supply to the Camberwell Guardians of a revolving cylindrical vessel for the pasteurisation of milk. Particulars from the Engineer at the Infirmary, Brunswick-square, Camberwell, S.E.

May 15. — **Norway.**—Cable.—Supply to the Norwegian State Telegraph Department of lead cable. Particulars of the Technical Department of the Telegraph Administration, Christiania.

May 25.—**Australia.**—Stay Rods.—Supply of 600 stay rods with bow tightener for the Deputy Postmaster-General, Melbourne. Specifications may be consulted at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, E.C.

May 26. — **Australia.** — Various. — Tenders invited by Supply and Tender Board, Adelaide, South Australia, for 328 best mild steel boiler plates, eighty best mild steel plates for flanging, twenty best mild steel firebox back plates, twenty best mild steel smokebox tube plates, sixty bars of best mild steel angles, 1,780 mild steel sheets, Nos. 13, 14, and 15 Birmingham gauge, 802 engine and tender tyres, and twenty-four cast steel tramcar wheels. Copies of specifications to be seen at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, E.C.

June 1.—**Australia.**—Cable.—Supply of eight miles of paper insulated lead-covered cable to the Deputy Postmaster-General at Melbourne. Copies of specification may be seen at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, E.C.

June 1.—**Johannesburg.**—Circuit Breakers.—Supply of circuit breakers to the Johannesburg Municipal Council. Copy of specification to be seen at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, E.C.

June 16. — **Australia.** — Morse Sounders.—Supply of 400 morse sounders for the Deputy Postmaster-General, Sydney. Copy of specification at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, E.C.

[Those with an asterisk (*) are advertised in this issue.]

ENGINEERING, etc.—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

NO DATE. — **Arklow.** — GROYNING. — Timber groyning, including supply of pitch pine piles, for beach protection works at Arklow. Particulars of Kynoch-Arklow, Ltd., Arklow.

NO DATE.—**Arley.**—TUNNEL.—Driving tunnel, 11 ft. by 7 ft. inside the timber, at an inclination of one in four through a fault in the Arley mine. Applications to the manager, Bamfurlong Colliery, near Wigan.

ROAD, SANITARY, AND WATER WORKS.

MAY 3.—**Swanage.**—TAR SPRAYING.—Materials and labour for tar spraying 27,000 super yds. of carriageway for the Swanage U.D.C. Specification from Mr. W. H. Pearce, Town Hall, Swanage.

MAY 4.—**Caerleon.**—STREET WORKS.—For kerbing, channelling, and paving for the U.D.C. Specification of Mr. T. R. P. Herbert, Clerk, Skinner-street, Newport, Mon.

MAY 4.—**Hale.**—SANITARY.—Conversion of sixteen privies in Appleton-road, Hale, to water closets for the U.D.C. Specifications from Mr. G. F. Bulmer, Sanitary Inspector, Council Offices, Ashley-road, Hale.

MAY 8.—**Jarrow.**—FOOTPATHS.—For cementing footpaths in portions of the borough up to September, 1915. Specifications of Mr. J. Scott Weir, Borough Engineer, Town Hall, Jarrow.

MAY 10.—**Hebburn.**—STREET WORKS, ETC.—For street works and extensions to reservoir in connection with the continuation of Argyle-street, Hebburn, for the Hebburn U.D.C. Specifications of the Deputy Surveyor, Mr. H. Lee, Jun., Council Offices, Argyle-street, Hebburn.

MAY 10.—**Holywood.**—WATERWORKS.—For construction for the Holywood U.D.C., Co. Down, of additional storage reservoir, filter, and auxiliary works. Quantities of Mr. S. C. Hunter, Quantity Surveyor, Scottish Provident-buildings, Belfast. Deposit, £2 2s.

MAY 11.—**Mountain Ash.**—STREET WORKS.—For street improvement in Aberdare-road and laying surface water drain in Llanwonno-road. Quantities of Mr. W. G. Thomas, Surveyor, Town Hall, Mountain Ash.

MAY 19.—**Stowmarket.**—ROADS.—For making up Victoria-road, Stowupland, near Stowmarket, for the East Stow R.D.C. Mr. H. E. Wilkes, Clerk, Market-place, Stowmarket.

Auction Sales.

* MAY 12.—Messrs. Churchill & Sim will sell by auction, at the Great Hall, Winchester House, Old Broad-street, E.C., an assortment of deals, battens, boards, timbers, etc.
* MAY 13.—**Moorfields.**—Messrs. Fryett, White, & Co. will sell by auction, at 23, Moorfields, various materials, etc., useful to a builder and contractor.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 18s. per annum, with delivery by *Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 21s. 8d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum.

Remittances (payable to THE BUILDER LTD.) should be addressed to 4, Catherine-street, Aldwych, London, W.C.

[Those with an asterisk (*) are advertised in this issue.]

OBITUARY.

Mr. W. H. Duffield.

The late Mr. William Henry Duffield, who practised at No. 5, Budge-row, Cannon-street, and formerly in King-street, and at No. 98, Queen-street, E.C., was elected in 1882 an Associate, and in 1898 a Fellow of the Royal Institute of British Architects. He was the architect, in competition, of the public baths—including two swimming-baths—erected in Cathall-road, Leytonstone, fourteen years ago, and for the rebuilding of No. 282, Strand, since pulled down for the Aldwych and Kingsway improvements. Some of his most recent work was carried out in connection with the widening of the High-street, Wandsworth, which has involved an extensive scheme of rebuilding.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to THE BUILDER LTD., and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

PRICES CURRENT OF MATERIALS.

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.]

Since our last issue glass and oil prices have been reduced and some increases are shown in timber.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

Per 1000 Alongside, in River.	£	s.	d.
Best Stocks	1	18	0
Picked Stocks for Facings	2	12	0

Per 1000, Delivered at Railway Depôt.	£	s.	d.		£	s.	d.
Flettons	1	14	0	Best Blue Pressed Staffordshire	3	15	0
Best Fareham Red	3	12	0	Do. Bullnose	4	0	0
Best Red Pressed Ruabon Facing	5	0	0	Best Stourbridge Fire Bricks	4	0	0

BRICKS, &c. (*Continued*).

GLAZED BRICKS—	£	s.	d.		£	s.	d.
Best White, Ivory, and Salt Glazed Stretchers	13	0	0	Double Headers	15	10	0
Headers	12	10	0	One Side and two Ends	19	10	0
Quoins, Bullnose and 4½ in. Flats	16	10	0	Two Sides and one End	20	10	0
D'ble Str'tch'rs	18	10	0	Splays and Squints	18	0	0

Second Quality £1 10s. per 1000 less than best.

	s.	d.	
Thames and Pit Sand	7	6	per yard, delivered.
Thames Ballast	6	0	,, ,,
Best Portland Cement	38	0	per ton, ,,
Best Ground Blue Lias Lime	21	0	,, ,,

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 15s. 6d. per yard delivered.
Stourbridge Fireclay in sacks 35s. 0d. per ton at rly. dept.

STONE.

Per Ft. Cube.

	s.	d.
BATH STONE — delivered on road waggons, Paddington Depôt	1	7½
Do. do. delivered on road waggons, Nine Elms Depôt	1	9½
PORTLAND STONE (20 ft. average)— Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	4½
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	6½

Per Ft. Cube, delivered at Railway Depôt.

	s.	d.		s.	d.
Ancaster in blocks	1	10	Closeburn Red Freestone	2	0
Beer in blocks	1	6	Red Mansfield Freestone	2	4
Greenshill in blocks	1	10	Talacre & Gwespyr Stone	2	4
Darley Dale in blocks	2	4			
Red Corsehill in blocks	2	3			

YORK STONE—*Robin Hood Quality.*

Per Ft. Cube, Delivered at Railway Depôt.	s.	d.
Scappled random blocks	2	10
Per Ft. Super., Delivered at Railway Depôt.		
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	8
6 in. rubbed two sides ditto, ditto	2	6
3 in. sawn two sides slabs (random sizes)	0	11½
2 in. to 2½ in. sawn one side slabs (random sizes)	0	7
1½ in. to 2 in. ditto, ditto	0	6

HARD YORK—

Per Ft. Cube, Delivered at Railway Depôt.	s.	d.
Scappled random blocks	3	0
Per Ft. Super., Delivered at Railway Depôt.		
6 in. sawn two sides landing to sizes (under 40 ft. super.)	2	8
6 in. rubbed two sides ditto	3	0
2 in. sawn two sides slabs (random sizes)	1	2
8 in. self-faced random flags	0	5

SLATES.

Per 1000 of 1200 at Railway Depôt.

In. In.	£	s.	d.	In. In.	£	s.	d.
20 x 10 best blue Bangor	13	5	6	20 x 12 ditto	14	5	0
20 x 12 ditto	14	7	6	16 x 8 ditto	7	0	0
20 x 10 1st q'lity ditto	13	0	0	22 x 10 best blue Portmadoc	12	12	6
				16 x 8 ditto	6	10	6

TILES.

At Railway Depôt.

	s.	d.		s.	d.
Best plain red roofing (per 1000)	42	0	Best "Hartshill" brand, plain sand-faced (per 1000)	45	0
Hip and Valley (per doz.)	3	7	Do. pressed (per 1000)	42	6
Best Broseley (per 1000)	50	0	Do. Ornamental (per 1000)	47	6
Do. Ornamental (per 1000)	52	6	Hip (per doz.)	4	0
Hip and Valley (per doz.)	4	0	Valley (per doz.)	3	6
Best Ruabon red, brown, or brindle (Edw'ds) (pr 1000)	57	6	Staffords. (Hanley) Reds or Brindled (per 1000)	42	6
Do. Ornamental (per 1000)	60	0	Handmade sand-faced (per 1000)	45	0
Hip (per doz.)	4	0	Hip (per doz.)	4	0
Valley (per doz.)	3	0	Valley (per doz.)	3	6

WOOD.

BUILDING WOOD.	At per standard.				£	s.	d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	£	21	10	0	22	0	0
Deals: best 3 in. by 9 in.		21	0	0	22	0	0
2 in. by 11 in.		23	0	0	23	10	0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.		19	10	0	20	10	0
Battens: best 2½ in. by 6 in. and 3 in. by 6 in.		0	10	0	less than 7 in. and 8 in.		
2 in. by 7 in.		20	0	0	—		
3 in. by 4 in.		21	0	0	—		
2 in. by 4½ in.		22	10	0	—		
3 in. by 4½ in.		21	10	0	—		
Deals: seconds		1	0	0	less than best		
Battens: seconds		0	10	0	,,		,,
2 in. by 4 in. and 2 in. by 6 in.		18	10	0	19	10	0
2 in. by 4½ in. and 2 in. by 5 in.		16	0	0	17	0	0
Foreign Sawn Boards— 1 in. and 1¼ in. by 7 in.		0	10	0	more than battens.		
¾ in.		1	0	0	,,		
Fir timber: best middling Memel (average specification)	At per load of 50 ft.	6	15	0	7	15	0
Seconds		6	0	0	6	10	0
Small timber (8 in. to 10 in.)		5	5	0	5	10	0
Small timber (6 in. to 8 in.)		4	10	0	5	0	6
Swedish balks		4	0	0	4	10	0
Pitch-pine timber (30 ft. average)		8	5	0	9	0	0

JOINERS' WOOD	At per standard.				£	s.	d.
White Sea: first yellow deals, 3 in. by 11 in.	£	33	15	0	35	0	0
Battens, 2½ in. and 3 in. by 7 in.		23	7	6	24	7	6
Second yellow deals, 3 in. by 11 in.		27	5	0	28	5	0
Do. 3 in. by 9 in.		25	5	0	26	5	0
Battens, 2½ in. and 3 in. by 7 in.		20	0	0	21	0	0
Third yellow deals, 3 in. by 11 in. and 9 in.		20	2	6	21	2	6
Battens, 2½ in. and 3 in. by 7 in.		19	0	0	20	0	0
Petersburg: first yellow deals, 3 in. by 11 in.		29	10	0	31	0	0
Do. 3 in. by 9 in.		25	5	0	26	5	0
Battens		19	5	0	20	5	0
Second yellow deals, 3 in. by 11 in.		21	10	0	23	0	0
Do. 3 in. by 9 in.		20	15	0	21	10	0
Battens		19	10	0	20	0	0
Third yellow deals, 3 in. by 11 in. / Do. 3 in. by 9 in.		19	10	0	—		
Battens		19	0	0	19	10	0
White Sea and Petersburg— First white deals, 3 in. by 11 in.		22	10	0	24	0	0
First white deals, 3 in. by 9 in.		21	0	0	22	10	0
Battens		18	10	0	19	0	0
Second white deals, 3 in. by 11 in.		20	0	0	21	0	0
Second white deals, 3 in. by 9 in.		19	0	0	20	0	0
Battens		18	0	0	18	10	0
Pitch-pine deals		34	0	0	35	0	0
Under 2 in. thick extra		0	10	0	1	0	0
Columbian or Oregon Pine, best quality		28	0	0	29	0	0
Yellow Pine—First, regular sizes		57	0	0	upwards.		
Oddments		39	0	0	,,		
Seconds, regular sizes		43	10	0	,,		
Oddments		37	0	0	,,		
Kauri Pine—Planks per ft. cube		0	7	6	—		
Oak Logs— Large, per ft. cube		0	5	6	0	6	6
Small ,, ,,		0	4	6	0	5	5
Wainscot Oak Logs, per ft. cube		0	10	6	0	12	6
Dry Wainscot Oak, per ft. super, as inch		0	1	0	0	1	3
¼ in. do. do.		0	0	10	0	1	0
Dry Mahogany—Honduras, Tabasco, per ft. super, as inch		0	1	0	0	1	4
Selected, Figury, per ft. super, as inch		0	1	6	0	2	6
Cuba Mahogany		0	1	6	0	2	6
Dry Walnut, American, per ft. super, as inch		0	1	0	upwards. 0		
French, "Italian," Walnut		0	1	0	0	1	

WOOD (*Continued*).

JOINERS' WOOD (*Continued*)—

	£	s.	d.		£	s.	d.
Teak, per load (Rangoon or Moulmein)	28	0	0	..	34	0	0
Do., do. (Java)	24	0	0	..	27	0	0
American Whitewood planks, per ft. cube	0	6	6	..	0	7	6
Prepared flooring, etc.—				Per square.			
1 in. by 7 in. yellow, planed and shot	0	18	0	..	1	0	0
1 in. by 7 in. yellow, planed and matched	0	18	0	..	1	0	0
1¼ in. by 7 in. yellow, planed and matched	1	2	0	..	1	5	0
1 in. by 7 in. white, planed and shot	0	17	6	..	1	0	0
1 in. by 7 in. white, planed and matched	0	18	0	..	1	0	0
1¼ in. by 7 in. white, planed and matched	1	2	0	..	1	5	0
¾ in. by 7 in. yellow, matched and beaded or V-jointed boards	0	14	6	..	0	16	6
1 in. by 7 in. „ „	0	18	6	..	1	1	0
¾ in. by 7 in. white „	0	14	6	..	0	16	6
1 in. by 7 in. „ „	0	18	6	..	1	1	0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London or delivered Railway Vans, per ton.						
	£	s.	d.		£	s.	d.
Rolled Steel Joists, ordinary sections	9	10	0	..	10	10	0
Compound Girders, ordinary sections	12	0	0	..	13	0	0
Steel Compound Stanchions	13	0	0	..	15	0	0
Angles, Tees, and Channels, ordinary sections	12	0	0	..	13	0	0
Flitch Plates	12	0	0	..	13	0	0
Cast Iron Columns & Stanchions, including ordinary patterns	9	0	0	..	10	0	0

METALS.

	Per ton, in London.						
	£	s.	d.		£	s.	d.
IRON—							
Common Bars	10	0	0	..	10	10	0
Staffordshire Crown Bars, good merchant quality	10	5	0	..	10	15	0
Staffordshire "Marked Bars"	12	0	0	..		—	
Mild Steel Bars	10	0	0	..	11	0	0
Hoop Iron, basis price	11	0	0	..		—	
„ „ Galvanised	19	0	0	..		—	
(* And upwards, according to size and gauge.)							
Sheet Iron Black—							
Ordinary sizes to 20 g.	11	10	0	..		—	
„ „ 24 g.	12	10	0	..		—	
„ „ 26 g.	14	0	0	..		—	
Sheet Iron, Galvanised, flat, ordinary quality—							
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	16	10	0	..		—	
Ordinary sizes to 22 g. and 24 g.	17	0	0	..		—	
Ordinary sizes to 26 g.	18	0	0	..		—	
Sheet Iron, Galvanised, flat, best quality—							
Ordinary sizes to 20 g.	19	0	0	..		—	
„ „ 22 g. and 24 g.	19	10	0	..		—	
Ordinary sizes to 26 g.	20	10	0	..		—	
Galvanised Corrugated Sheets—							
Ordinary sizes, 6 ft. to 8 ft. 20 g.	15	10	0	..		—	
Ordinary sizes, 22 g. and 24 g.	16	10	0	..		—	
Ordinary sizes, 26 g.	17	10	0	..		—	
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	13	10	0	..		—	
Best Soft Steel Sheets, 22 g. & 24 g.	14	10	0	..		—	
Best Soft Steel Sheets, 26 g.	16	10	0	..		—	
Cut Nails, 3 in. to 6 in.	13	10	0	..	14	0	0
(Under 3 in., usual trade extras.)							

LEAD, &c.

	Delivered in London.						
	£	s.	d.		£	s.	d.
LEAD—Sheet, English, 4 lb. and up	25	15	0	..		—	
Pipe in coils	26	5	0	..		—	
Soil pipe	29	5	0	..		—	
Compo pipe	29	5	0	..		—	
NOTE—Delivery in country in not less than 5 cwt. lots, 1s. per cwt. extra.							
ZINC—	In casks of 10 cwt.						
Sheet—	72	0	0	..		—	
COPPER—							
Strong Sheet per lb.	0	1	5	..		—	
Thin „ „	0	1	7	..		—	
Copper nails „	0	1	5	..		—	
Copper wire „	0	1	5	..		—	
BRASS—							
Strong Sheet „	0	1	4	..		—	
Thin „	0	1	5	..		—	
TIN—English Ingots „	0	1	9	..		—	
SOLDER—Plumbers' „	0	0	10	..		—	
Tinmen's „	0	1	1	..		—	
Blowpipe „	0	1	3	..		—	

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.*

Per Ft. Delivered.

15 oz. thirds	4½d.	26 oz. fourths	5½d.
„ fourths	4½d.	32 oz. thirds	7½d.
21 oz. thirds	5½d.	„ fourths	6½d.
„ fourths	5d.	Fluted Sheet, 15 oz.	5½d.
26 oz. thirds	6½d.	„ 21 oz.	6½d.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.*

Per Ft. Delivered.

¼ Rolled plate	3d.
5/16 Rough rolled and rough cast plate	3½d.
⅜ Rough rolled and rough cast plate	4d.
Figured Rolled, Oxford Rolled, Oceanic, Arctic, Muffled, and Rolled Cathedral, white	5d.
Ditto, tinted	6d.

* Not less than two crates.

OILS, &c.

		£	s.	d.
Raw Linseed Oil in pipes	per gallon	0	3	0
„ „ „ in barrels	„	0	3	1
„ „ „ in drums	„	0	3	4
Boiled „ „ in barrels	„	0	3	3
„ „ „ in drums	„	0	3	6
Turpentine in barrels	„	0	3	1
„ in drums	„	0	3	4
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)		34	0	0
Red Lead, Dry	per ton	33	0	0
Best Linseed Oil Putty	per cwt.	0	10	0
Stockholm Tar	per barrel	1	12	0

VARNISHES, &c.

	Per gallon.		
	£	s.	d.
Fine Pale Oak Varnish	0	8	0
Pale Copal Oak	0	10	6
Superfine Pale Elastic Oak	0	12	6
Fine Extra Hard Church Oak	0	10	0
Superfine Hard-drying Oak, for seats of Churches	0	14	6
Fine Elastic Carriage	0	12	9
Superfine Pale Elastic Carriage	0	16	0
Fine Pale Maple	0	10	0
Finest Pale Durable Copal	0	18	6
Extra Pale French Oil	1	1	0
Eggshell Flating Varnish	0	18	0
White Plate Enamel	1	4	0
Extra Pale Paper	0	12	0
Best Japan Gold Size	0	10	0
Best Black Japan	0	16	0
Oak and Mahogany Stain	0	9	0
Brunswick Black	0	8	0
Berlin Black	0	16	0
Knotting	0	10	6
French and Brush Polish	0	10	0

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.]

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 2 *p.m. on Wednesday.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.* unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

FALMOUTH.—Erection of a laundry at Falmouth, for Mr. Langman :—

R. Pickett, Ilfracombe* £1,764

GRAYS.—For constructing western portion of sewerage scheme, for the Joint Sewerage Board :—

C. Bentley, Emsworth* £22,239

[Subject to approval of the Local Government Board.]

INCE.—Construction of sewage disposal works, etc., for the Urban District Council :—

J. Bentley	£13,550	Clegg Bros.	£10,575
W. J. Bickerstaff	13,072	Cowburn & Sons	10,555
H. E. Buckley	13,000	J. & H. Houghton	10,461
Smith Bros.	12,734	Webster & Winstanley, Wigan*	10,283
F. E. Binns	12,611	J. Horrocks	10,164
W. Jowitt	11,074		
Bentley & Jubb	10,664		

LONDON.—For general repairs, drainage works, hot-water circulation, and decorations, at No. 6, Bloomfield-terrace, S.W. Messrs. Rogers, Chapman, & Thomas, surveyors, 50, Belgrave-road, Westminster, S.W. :—

Jones & Betts	£561 15 4	J. D. Hunt, Ltd.	£425 15 0
W. Day & Son	538 17 0	J. Walker & Son, Streatham, S.W.*	342 17 6
E. D. Hook	519 10 0		

LONDON.—For the supply and laying of cables required in connection with an additional temporary supply of power up to 3,500 k.w., to be obtained from the London Electric Supply Corporation, for the London County Council :—

Callender's Cable and Construction Co., Ltd.	£6,833 2 6
Siemens Bros. & Co., Ltd.	6,798 17 6
W. T. Glover & Co., Ltd.	6,742 18 4
Johnson & Phillips, Ltd.	6,636 3 4
W. T. Henley's Telegraph Works, Ltd.	6,407 13 4
British Insulated and Helsby Cables, Ltd.	6,298 0 0
Western Electric Co., Ltd., North Woolwich*	6,214 0 0

LONDON.—For the conversion of the Bayswater fire sub-station into a full station, for the London County Council :—

Higgs & Hill, Ltd.	£6,900 0 0
L. H. & R. Roberts	6,377 0 0
W. Smith & Son	6,171 0 0
W. King & Son	6,087 0 0
A. Monk	6,040 0 0
F. J. Coxhead	5,997 0 0
J. & C. Bowyer, Ltd.	5,993 0 0
G. E. Wallis & Sons, Ltd.	5,975 0 0
Triggs & Co.	5,850 0 0
W. J. Maddison	5,539 0 0
H. L. Holloway	5,493 0 0
G. Godson & Sons	5,345 0 0
G. Godson & Sons, Kilburn-lane, W. (alternative tender)*	5,220 2 11

LONDON.—For the erection of a temporary workshops building at the chief station of the fire brigade, for the London County Council :—

A. Monk	£1,325	J. C. Mather, Northampton-st., W.*	£1,100
G. Godson & Sons	1,285		
C. Wall, Ltd.	1,200		
J. McManus	1,190		

LONDON.—For the provision of additional lavatory accommodation for employees at Clapham car shed, for the London County Council :—

C. Wall, Ltd.	£150
J. & C. Bowyer, Ltd.	120
J. Marsland & Sons	112
A. Roberts & Co., Ltd., Kensington*	103

LONDON.—Alterations to lodge at Abbey Mills pumping station, for the London County Council :—

W. Harris	£406 0 0	A. Newman & Co.	£218 2 0
F. & H. T. Thorne	347 0 0		
Griggs & Son	276 0 0		

[The Committee have decided not to accept any of the tenders.]

LONDON.—Erection of dwellings on the first section of the Tabard-street area, for the London County Council :—

J. Longley & Co.	£31,864
Holliday & Greenwood, Ltd.	31,253
J. Greenwood, Ltd.	30,870
Brand, Pettit, & Co.	30,307
Holloway Bros. (London), Ltd.	29,695
Holland, Hannen, & Cubitts, Ltd.	29,475
C. Wall, Ltd.	28,923
Ashby & Horner, Ltd.	28,700
J. Garrett & Son	28,645
F. & T. Thorne	28,443
A. Monk	27,645
W. Lawrence & Son	27,572
G. E. Wallis & Sons, Ltd.	27,334
Allen Fairhead & Son	26,835
G. Godson & Sons	26,796
Rowley Bros., Wood Green*	26,422

LONDON.—The Main Drainage Committee of the London County Council have accepted the following tenders :—

Sewerage and Drainage—Supply of Cast-Iron Portions of Twelve Ventilating Columns.

Meadow Foundry Company, Ltd., Mansfield	£288 0 0
W. Boydell & Sons, Ltd., Leigh, Lancs.	295 12 0
W. Macfarlane & Co., Glasgow	372 4 6
Carron Company, Falkirk	422 14 0
Seagers, Ltd., Dartford	510 0 0

North Woolwich Pumping-station (enlargement)—Cast-Iron Piping.

J. Oakes & Co., Ltd., Alfreton, Derbyshire	300 0 0
Holwell Iron Co., Ltd., Melton Mowbray	360 0 0

North Woolwich Pumping-station (enlargement)—Cast-Steel Tee Pipes.

Atlas Steel Foundry and Engineering Co., Ltd., Armadale	43 0 0
T. Firth & Sons, Ltd., Sheffield	70 0 0

North Woolwich Pumping-station (enlargement)—Hot Well Tanks.

Baldwins, Ltd., Blackwall, E.	29 9 0
G. A. Harvey & Co., Ltd., Woolwich-road, S.E.	46 0 0

Southern Outfall—Cast-Iron Pans for Lime and Iron Mills.

Wotton Bros., Ltd., Coalville	178 10 0
J. Cochrane, Barrhead	188 0 0
C. Whittaker & Co., Ltd., Accrington	194 10 0
Brightside Foundry & Engineering Co., Ltd., Sheffield	220 0 0
Seagers, Ltd., Dartford	265 0 0

Heathwall Pumping-station—Painting Engines, Pumps, and Quarters.

G. Potton & Son, Tower Bridge-road, S.E.	111 5 0
E. T. Sheehan & Son, Kilburn, N.W.	111 11 6
W. Hammond, Battersea, S.W.	130 0 0

Sewerage and Drainage—Steel Tubes for Ventilating Columns.

T. Piggott & Co., Ltd., Birmingham	324 0 0
J. Spencer, Ltd., Wednesbury	342 0 0
Wellington Tube Works, Ltd., Great Bridge, Staffs	420 0 0

North Woowlich Pumping-station (enlargement)—Wrought Steel, Steam Exhaust, etc., Piping.

J. Spencer, Ltd., Wednesbury	90 0 0
Stewart & Lloyd's, Ltd., Glasgow	92 10 0
J. Russell & Sons, Ltd., Wednesbury	43 18 6 (Not to specification.)

Southern Outfall—Pipe Connections for New Ash Hoist.

Glenfield & Kennedy, Ltd, Kilmarnock	67 10 0
J. Blakeborough & Sons, Brighouse	70 0 0
Leeds Engineering and Hydraulic Co., Ltd., Leeds	97 0 0
East Ferry-road Engineering Works, Co., Ltd., Millwall, E.	141 10 0

LONDON.—For the execution of roadwork in connection with the construction of the Council's tramways in East-hill, Wandsworth, from the present terminus to Fairfield-street, for the London County Council :—

A. Stark & Sons, Ltd.	£6,700
W. Manders & Co.	5,903
Dick, Kerr, & Co., Ltd.	5,867
W. Griffiths & Co., Ltd.	5,692
A. N. Coles	5,591
J. Mowlem & Co., Ltd., Westminster*	5,415
G. Wimpey & Co.	5,198

LONDON.—The Education Committee of the London County Council have accepted the following tenders :—

Lewisham—Adamsrill-road—New School.
J. Smith & Sons, Ltd. £17,979 0

Marylebone, W.—Barrett-street—Adaptation as Trade School.
J. & C. Bowyer, Ltd. 815 0

Islington, S.—Sebbon-street—Heating.
Yetton & Brockett, Ltd. 787 0

St. Pancras, S.—Exmouth-street—Electric Lighting.
H. J. Cash & Co., Ltd. 349 0

Wandsworth—Wandsworth Technical Institute—Painting New Building.
Triggs & Co. 155 0

Wandsworth—Hitherfield-road—New School.
Lole & Co. 5,660 0

Hackney, S.—County Secondary School, South Hackney—Heating.
R. H. & J. Pearson, Ltd. 1,132 0

St. Pancras, W.—Haverstock Hill—Heating.
R. H. & J. Pearson, Ltd. 889 0

Sussex—Portslade Industrial School—Heating.
J. Smith & Son 65 0

Laying Wood Block Flooring at Council Schools.
Zeta Wood Flooring Co... 6s. 2d. per sq. yd.

Hampstead—Netherwood-street—Heating.
Yetton & Brockett, Ltd. 335 0

Haggerston—Scawfell-street—Electric Lighting.
Johnson, O'Sullivan, & Co. 312 13

Whitechapel—Old Montague-street—Ventilating Fans.
Matthews & Yates, Ltd. 90 0

Marylebone, W.—Barrett-street Trade School for Girls—Hot-water Supply.
Yetton & Brockett, Ltd. 89 0

Hoxton—Shoreditch Technical Institute—Equipment.
W. H. De Ritter & Co., Ltd. 70 10

Hackney, S.—Homerton Residential—Extending Lavatories.
Brand, Pettit, & Co. 597 0

Hackney, S.—Homerton Residential—Iron Staircase.
Hayward Bros. & Eckstein, Ltd. .. 65 10

Austrian
RUSSIAN and JAPANESE
PRIME DRY
WAINSCOT **Oak**
SYDNEY PRIDAY,
KING WILLIAM HOUSE, 2a, EASTCHEAP, LONDON, E.C.
Depot: Wainscot Sheds, Millwall, E. *T.N.: Avenue 667.*

LONDON.—For the supply of 100,000 creosoted deal paving blocks, 3 in. by 9 in. by 5 in., for the London County Council :—

	Price a 1,000.
W. Griffiths & Co., Ltd.	£11 17 6
W. W. Howard Bros. & Co.	11 12 6
Millar's Timber and Trading Co., Ltd.	11 12 3
Improved Wood Pavement Co., Ltd.	11 12 0
Burt, Boulton, & Haywood, Ltd...	11 10 0
T. Gabriel & Sons & Burtons	11 7 9
J. B. Lee & Sons, Ltd.	11 7 6
Acme Flooring and Paving Co. (1904), Ltd., Victoria Park*	11 4 9

LONDON.—For paving and other works in connection with the Southampton-row improvement between Bloomsbury-place and Vernon-place, for the London County Council :—

E. T. Bloomfield	£6,378 6 9
J. Mowlem & Co., Ltd.	6,270 1 6
G. J. Anderson	6,245 8 4
J. Ford	6,233 14 2
H. Farrow, Brixton*	5,983 9 1

MORECOMBE.—For erection of shop and premises, Lancaster-road, Morecambe, for the Lancaster and District Co-Operative Society, Ltd. Mr. R. Jackson, architect, 32, Market-square, Lancaster. Quantities by architect :—

Mason: F. Schofield, Heysham*..	£415 0 0
Joiners: Thompson & Morris, Lancaster*	327 0 0
Plumbers: Calvert & Heald, Lancaster*	144 0 0
Slaters: T. & J. Till, Lancaster*..	48 13 0
Painter: W. H. Greenep, Lancaster*	19 1 2

OYSTERMOUTH.—Erection of nave and chancel at All Saints' Church. Mr. W. L. Bernard, architect, Cheltenham :—

E. Walters & Son	£14,742	Bennett Bros.	£9,633
W. Cowlin & Sons.	13,548	Franklin, Ltd.	9,250
J. G. Morris	10,670	Collins & Godfrey..	8,976
Lloyd Bros.	10,476	J. Thompson & Co., Peterborough* ..	8,889
W. J. Bloxham ..	10,297	J. Long & Sons ..	8,888
H. Pittard & Son	10,069		
J. & F. Weaver..	10,059		

READING.—For decorative repairs, etc., at the Central Boys' and Battle-street Schools, for the Education Committee :—
Boyd & Murley, Reading* £112 10s. and £73 10s.

J. J. ETRIDGE, Jr.
SLATE MERCHANTS. LTD.
EXPERTS IN
SLATING, TILING.
BEST WORK ONLY.
Telephone: Avenue 4940 (two lines), or write—
Bethnal Green Slate Works,
BETHNAL GREEN, LONDON, E.

PORTLAND.—Erection of offices for the Urban District Council :—

Pittard & Sons ..	£6,435	Jesty & Baker ...	£5,875
R. G. Spiller	5,995	T. Conway, Ltd...	5,669
H. B. Dunthorne..	5,900	J. Dyer & Sons*..	5,145

[Subject to approval of the Local Government Board.]

SNIBSTONE.—For erection of the first portion of new church at Snibstone, for the Leicester Church Extension Board. Messrs. Stockdale, Harrison, & Sons, architects, 7, St. Martin's East, Leicester :—

Franklin & Co. ..	£2,360	G. Rogers & Son..	£1,819
Barker & Son	2,024	Orton & Co.	1,819
J. Bentley & Co...	1,970	W. Moss & Son, Coalville*	1,788
E. Fox	1,947		

[The above tenders do not include the slating.]

SOUTHGATE.—For the completion of St. Andrew's Church, Old Southgate. Messrs. Barker & Kirk, architects :—

Dove Bros.	£6,775	A. & S. Wheater..	£6,040
Goddard & Sons ..	6,290	Mattock Bros.	5,955
A. Monk	6,210	Newby Bros.	5,940
J. Bentley	6,078	Knight & Son	5,878
W. Laurence & Son	6,072		

AUSTRIAN and RIGA.
FIRST-CLASS, MILD GRAINED, DRY
WAINSCOT **OAK.**
J. GLIKSTEN & SON, Ltd.,
Carpenters' Road, Stratford, E.
Telegrams: "Gliksten, Strat, London." *Telephone No.:* Eastern 3771 (5 lines.)

Ham Hill Stone.
Doulting Stone.
Portland Stone.
The Ham Hill and Doulting Stone Co., Limited
(incorporating the Ham Hill Stone Co. and C. Trask & Son, The Doulting Stone Co.).
Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams, 16, Craven-street, Strand.

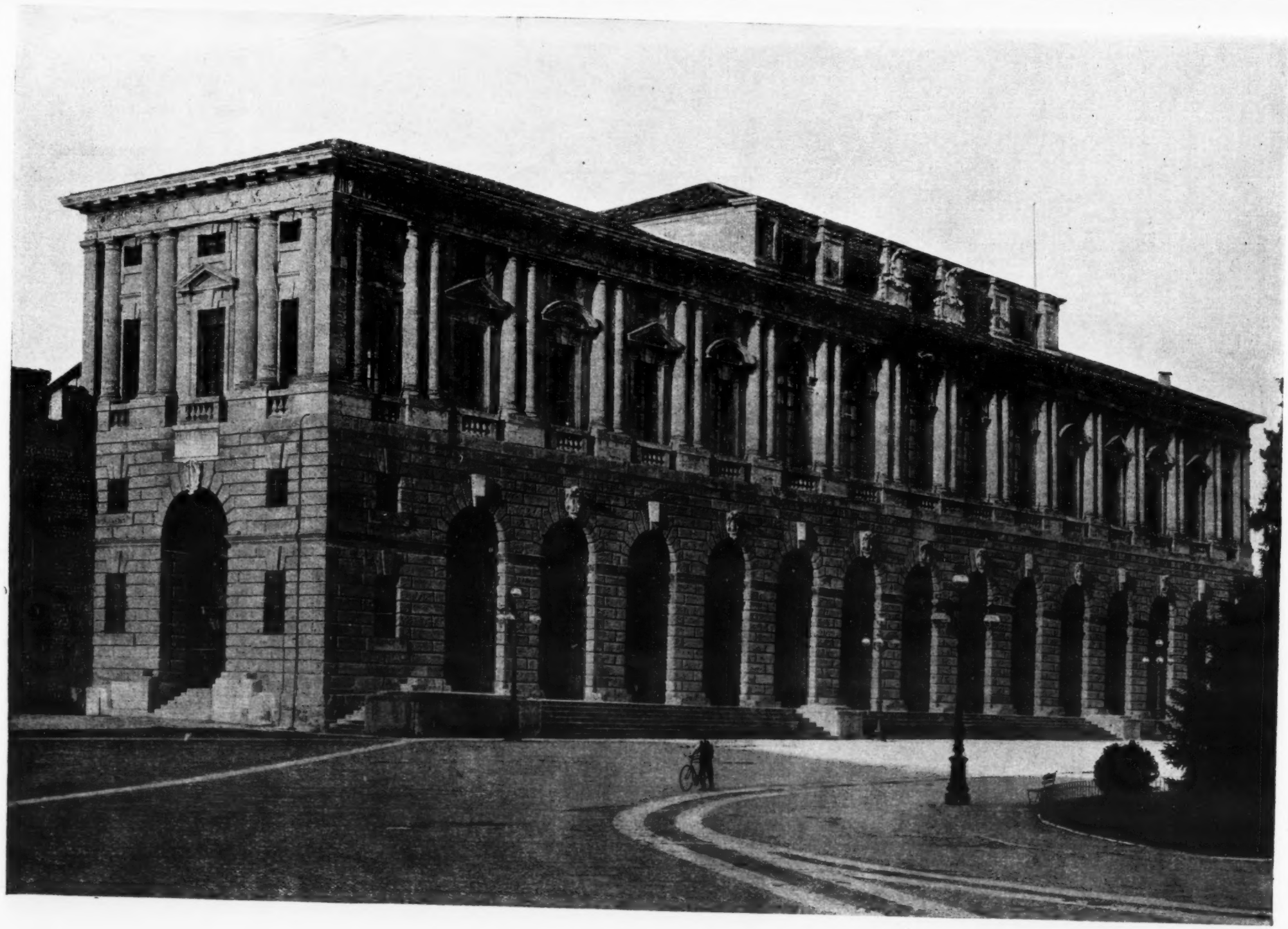
Asphalte.—The Seyssel and Metallic Lava Asphalte Co. (Mr. H. Glenn), Office, 42, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to Forth Bridge Co. T.N. 2644 Central.

JOINERY,
Of every description and in any kind of Wood.
CHAS. E. ORFEUR, LTD.,
ESTIMATES ON APPLICATION.
COLNE BANK WORKS, COLCHESTER.
Telephone: 0195. Telegrams: "Orfeur, Colchester."

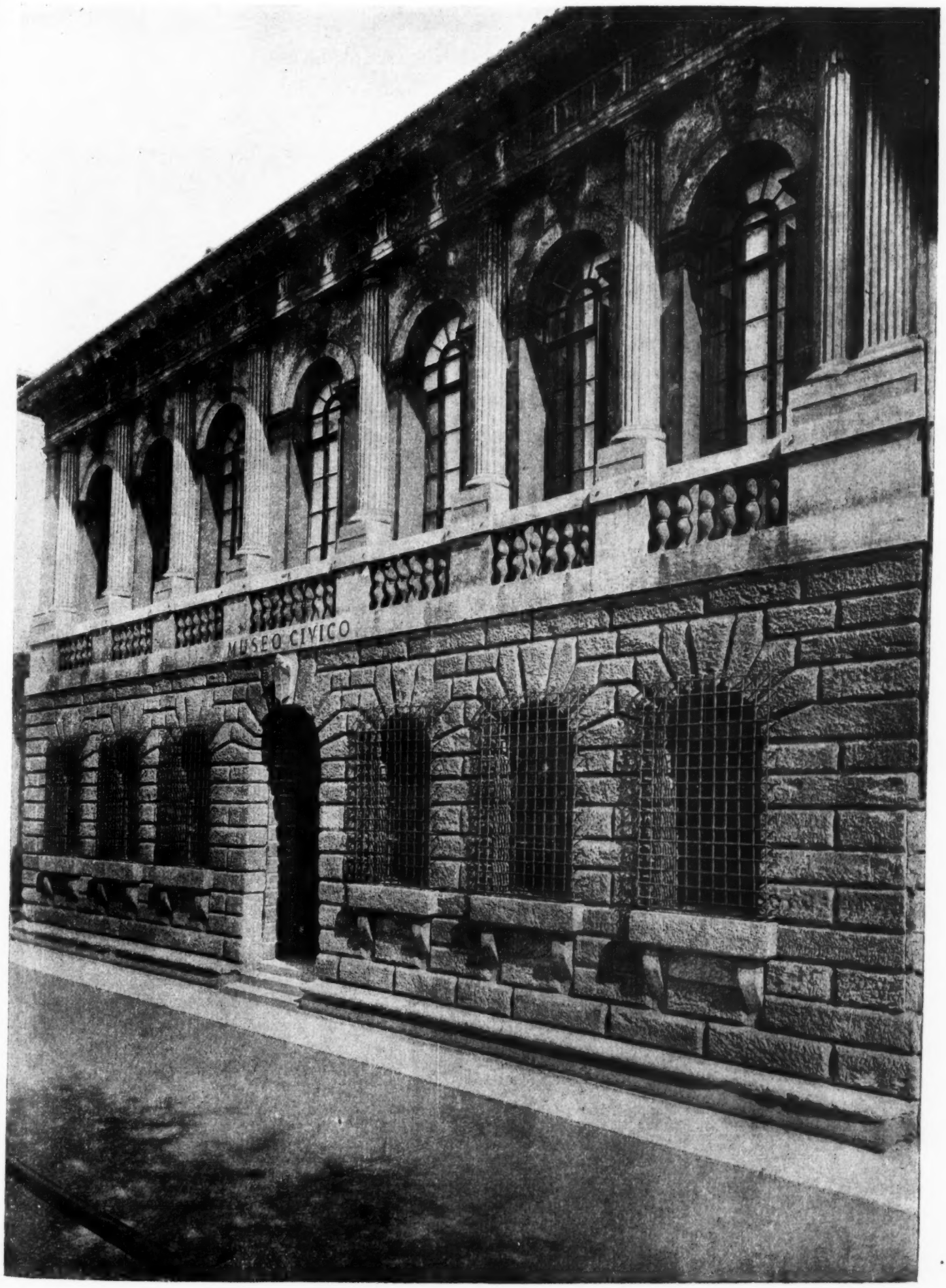
ALSO AT DEPTFORD, LIVERPOOL, BRISTOL,

GLASGOW, FALKIRK, BELFAST, & DUBLIN.
TELEPHONE: Museum 3032 (5 Lines).
Chief Offices: 352 to 364, EUSTON ROAD, LONDON, N.W.

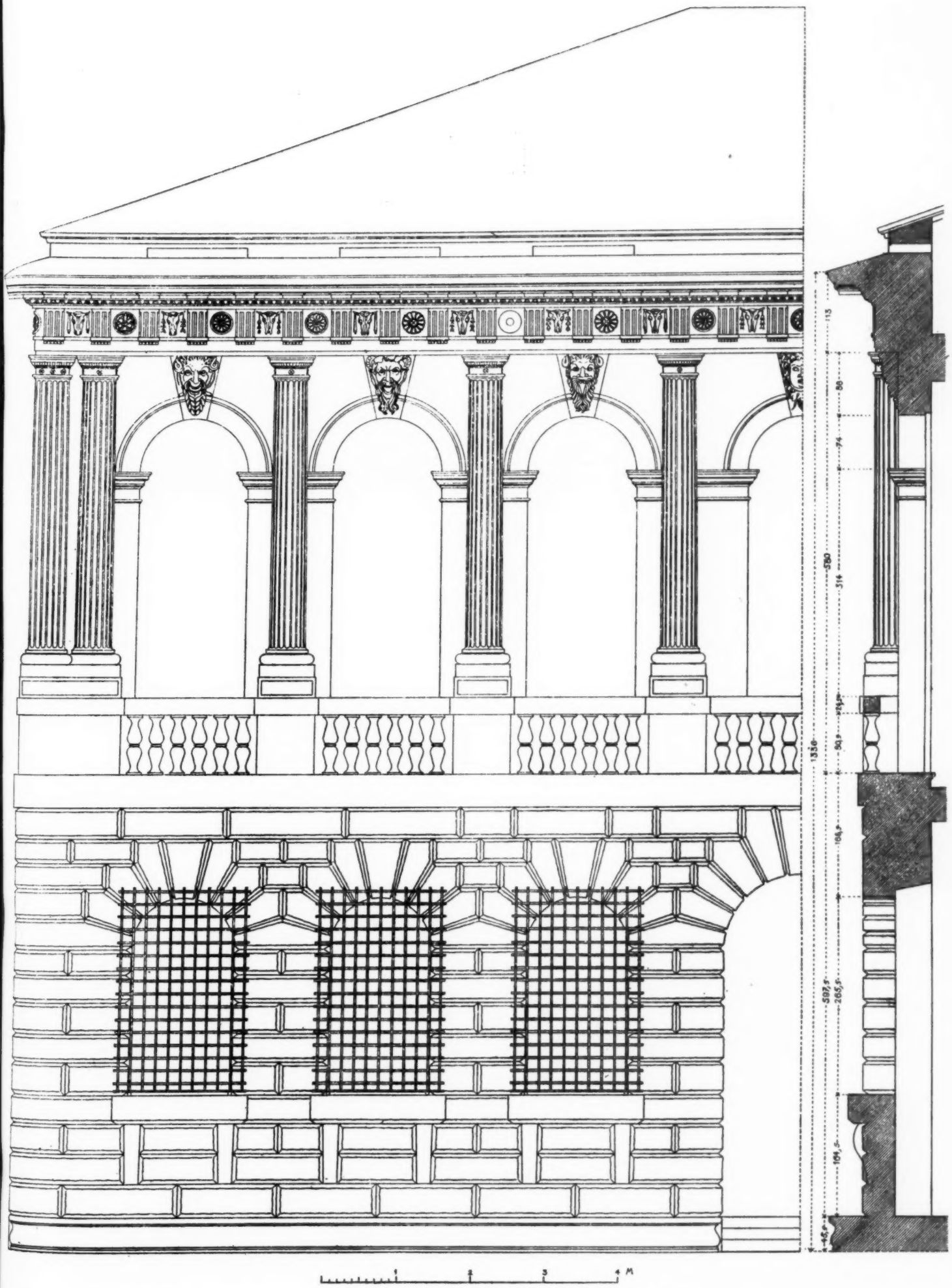
THE BUILDER, APRIL 30, 1915.



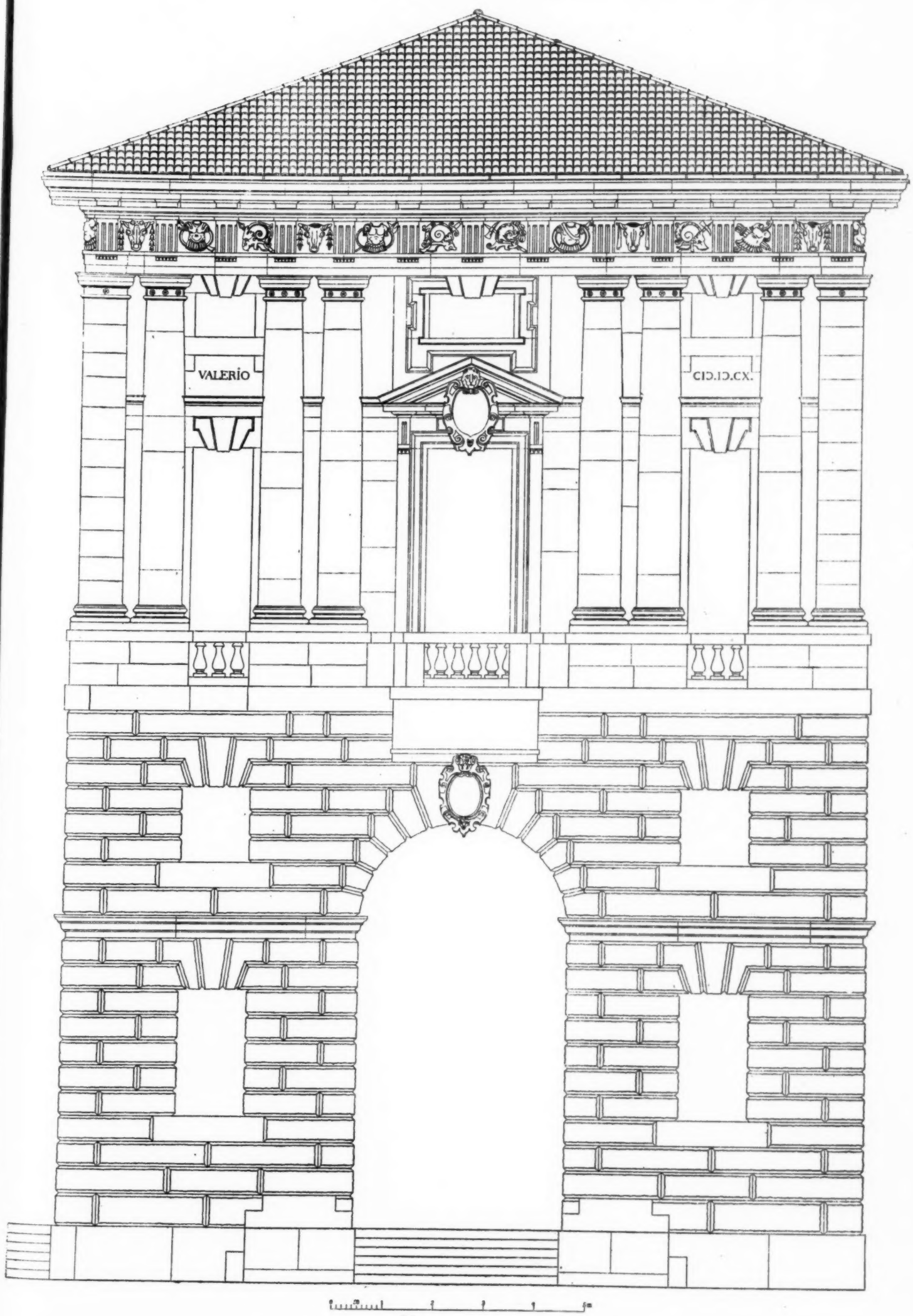
THE GRAN GUARDIA, VERONA.



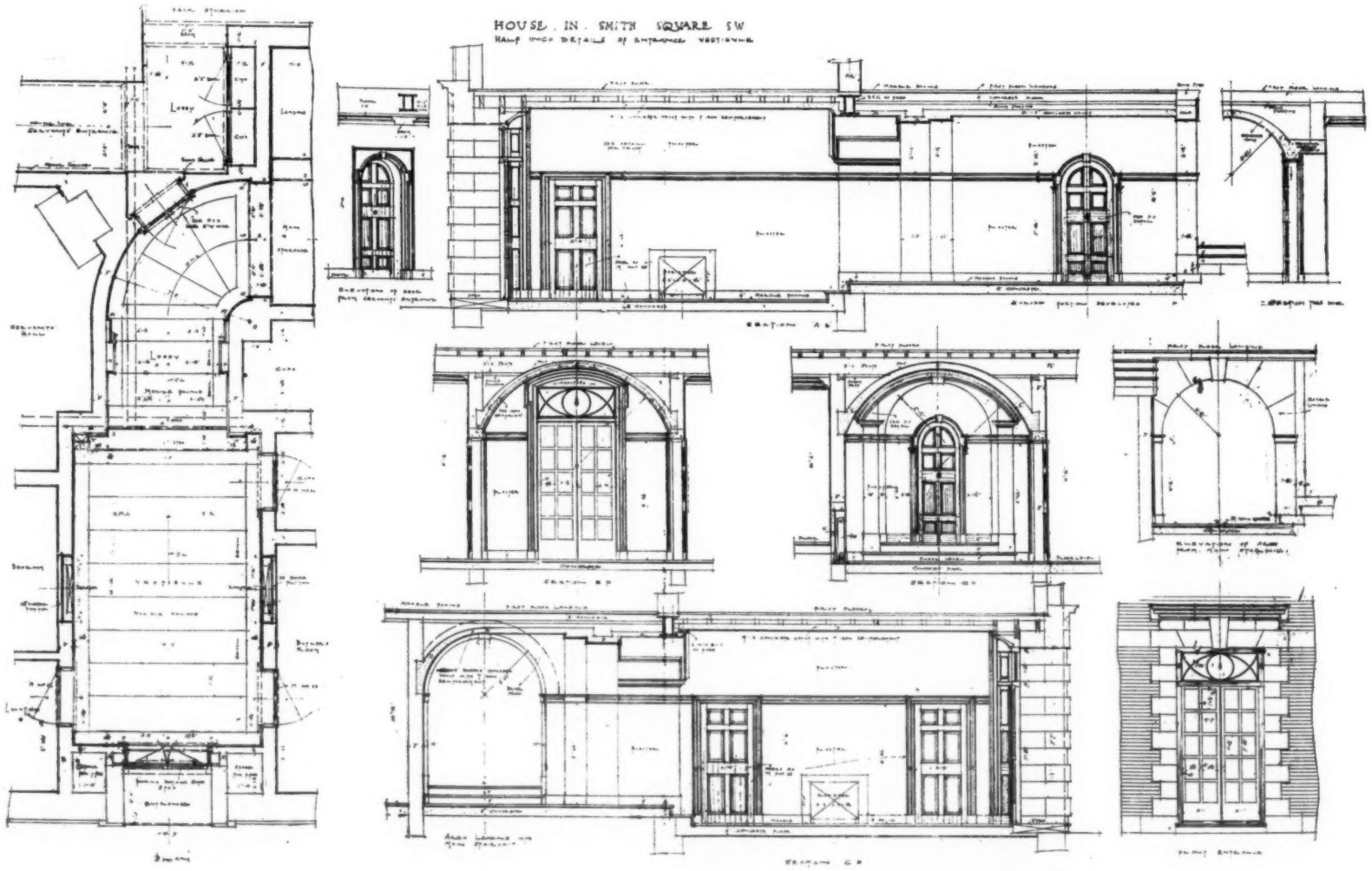
PALAZZO POMPEI, VERONA.



PALAZZO POMPEI, VERONA: PART ELEVATION.

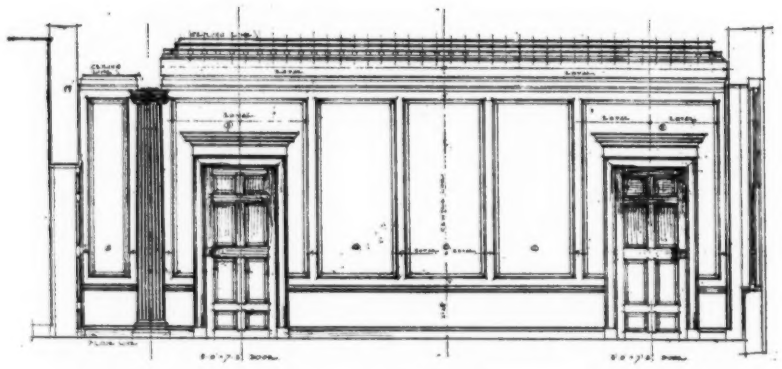


GRAN GUARDIA, VERONA: END ELEVATION.

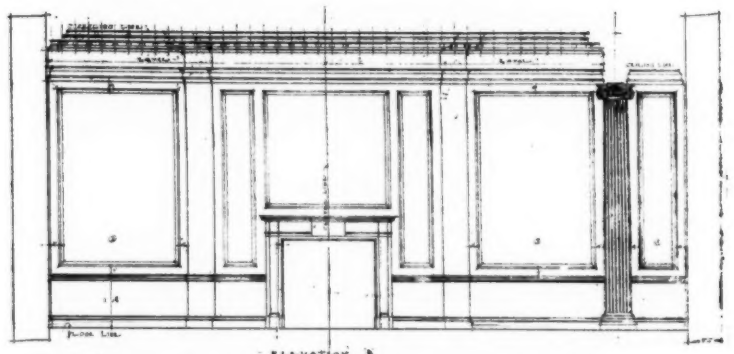


HOUSE IN SMITH SQUARE, S.W.—Mr. E. L. Lutyens, A.R.A., Architect.

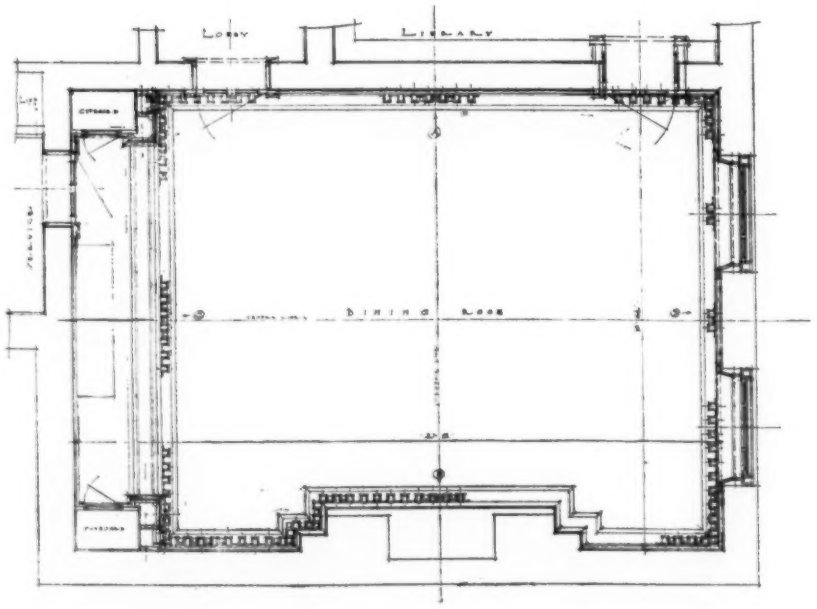
THE BUILDER

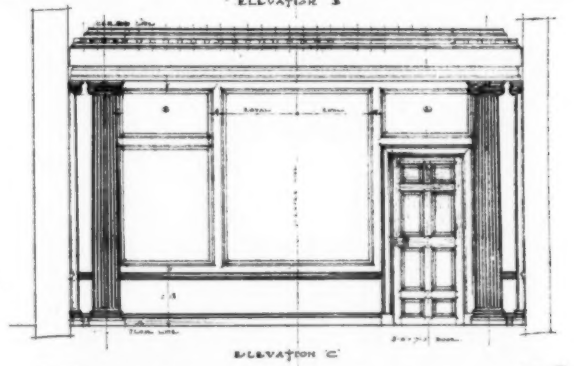


ELEVATION A.

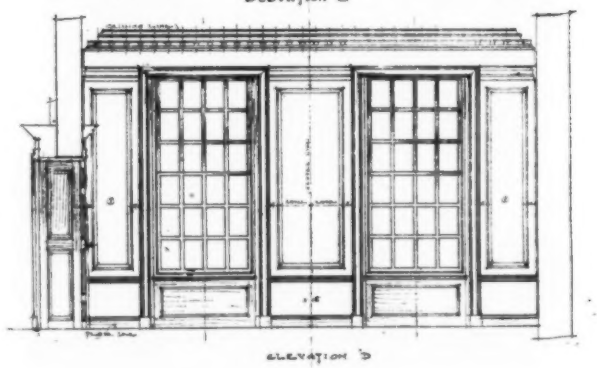


ELEVATION B





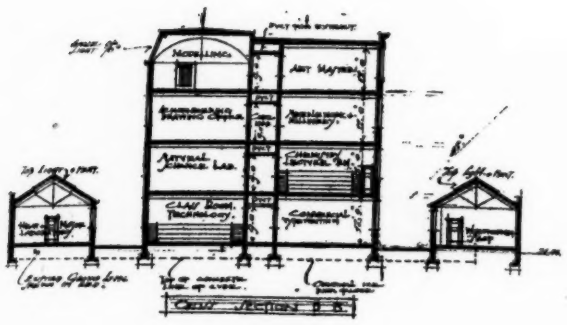
ELEVATION C

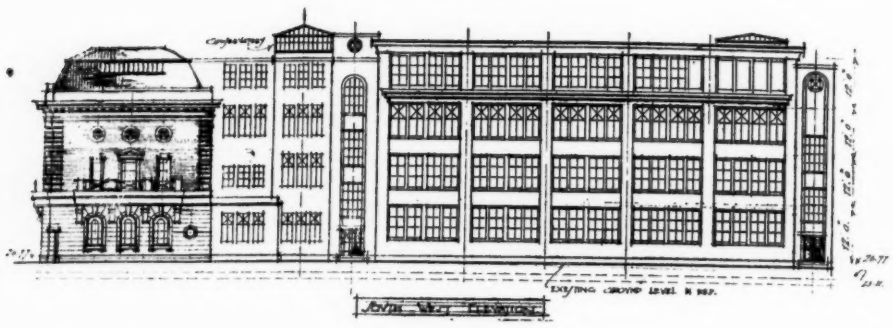


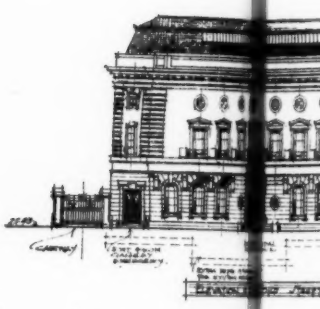
ELEVATION D

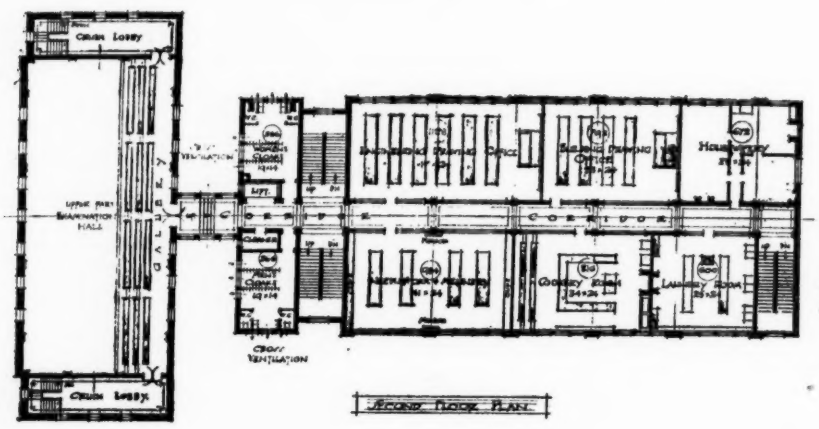
HOUSE IN SMITH SQUARE, S.W.—Mr. E. L. Lutyens, A.R.A., Architect.

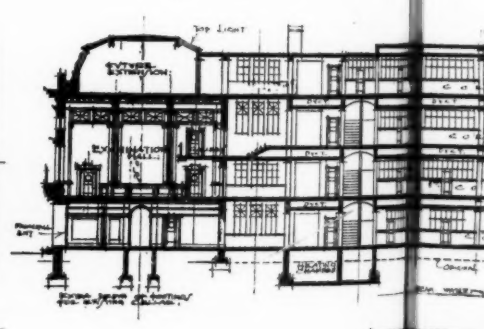
COUNTY BOROUGH OF
PROPOSED TECHNICA
SCHEME

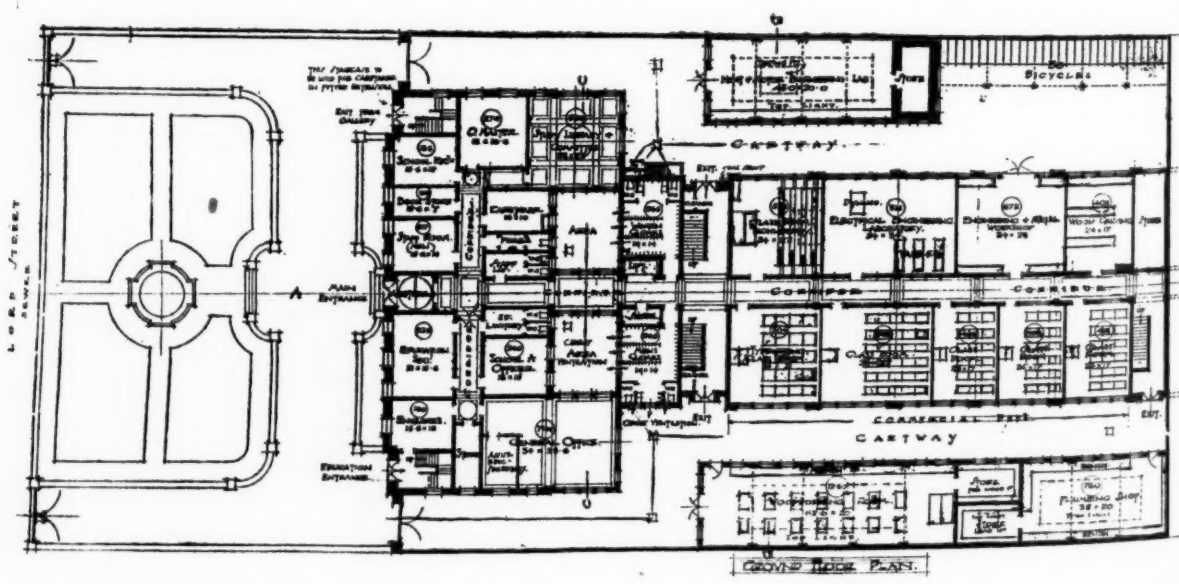






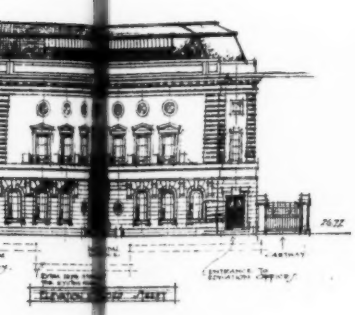


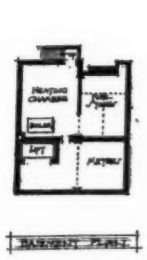


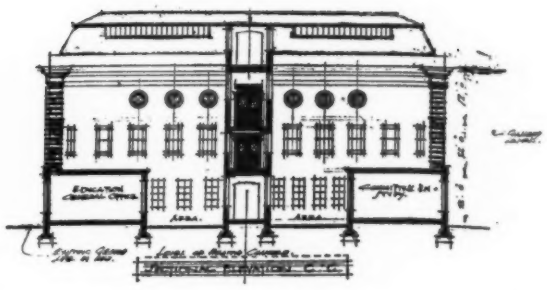


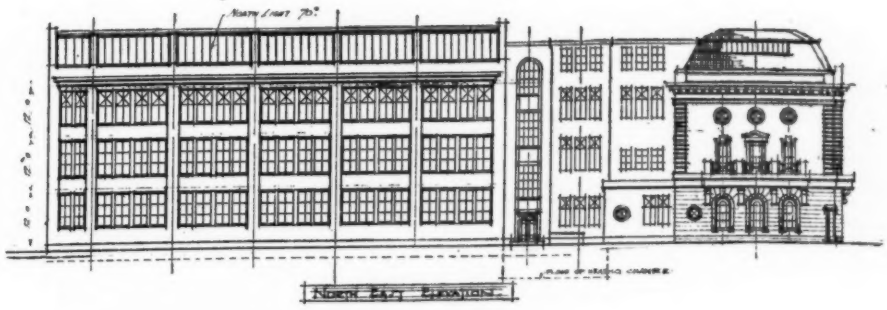
DESIGN PLACED SECOND.—B ESSRS. S.

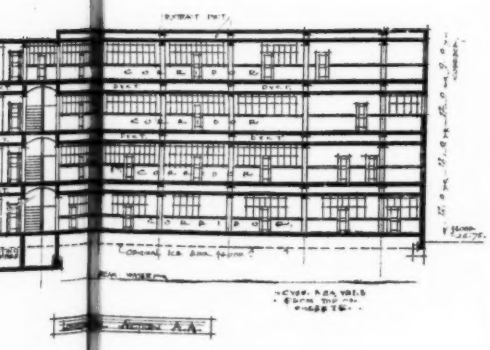
BOROUGH OF SOUTHPORT.
PROPOSED TECHNICAL SCHOOLS.
SCHEME B

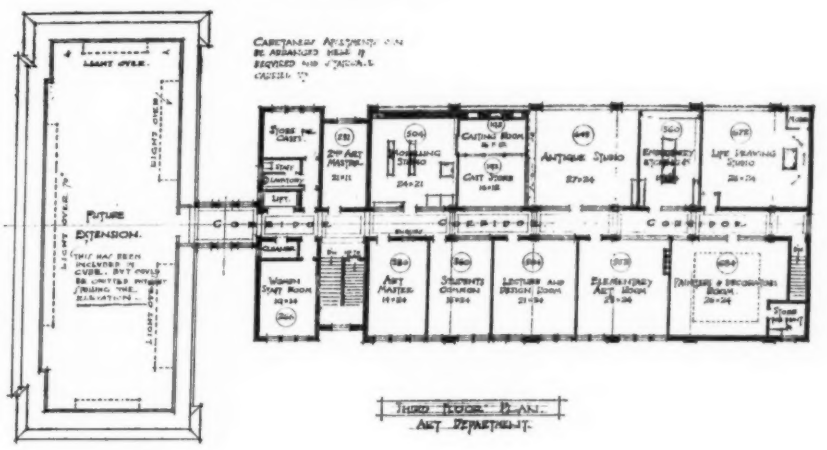


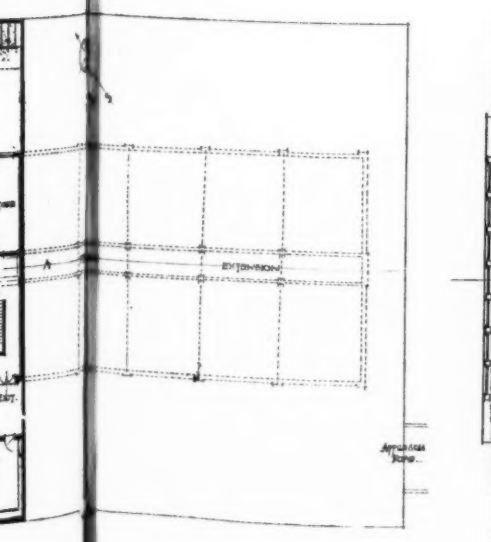


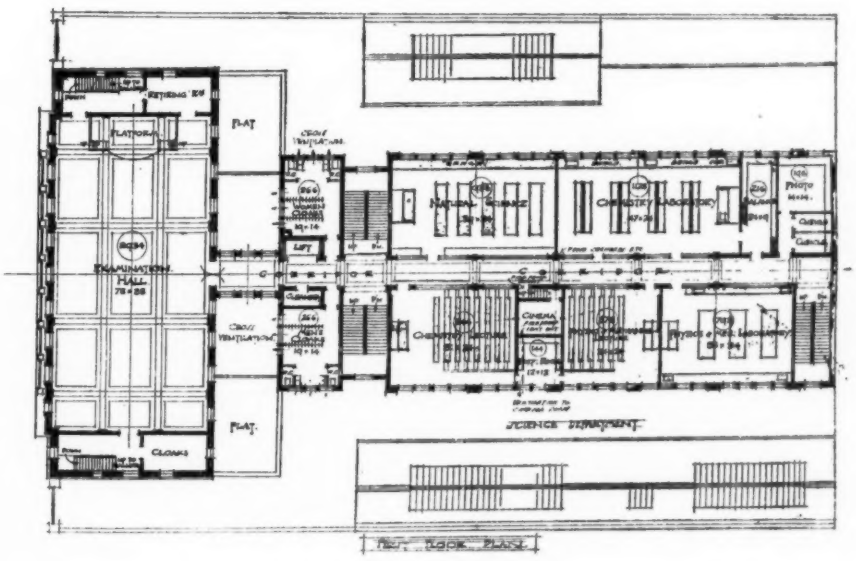












SECOND.—BY MESSRS. S. N. COOKE & TWIST.